

Knoll Lowney  
Marc Zemel  
SMITH & LOWNEY, PLLC  
2317 East John Street  
Seattle, Washington 98112  
(206) 860-2883

Katelyn Kinn  
PUGET SOUNDKEEPER ALLIANCE  
130 Nickerson Street, Suite 107  
Seattle, WA 98109  
(206) 297-7002

Attorneys for Plaintiff

UNITED STATES DISTRICT COURT  
WESTERN DISTRICT OF WASHINGTON  
AT SEATTLE

PUGET SOUNDKEEPER ALLIANCE,	)	
	)	
Plaintiff,	)	
v.	)	COMPLAINT
	)	
UNION PACIFIC RAILROAD	)	
COMPANY,	)	
	)	
Defendant.	)	
	)	
	)	

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**I. INTRODUCTION**

1. This action is a citizen suit brought under Section 505 of the Clean Water Act (“CWA”) as amended, 33 U.S.C. § 1365. Plaintiff Puget Soundkeeper Alliance seeks a declaratory judgment, injunctive relief, the imposition of civil penalties, and the award of costs, including attorneys’ and expert witnesses’ fees, for Defendant Union Pacific Railroad Company’s repeated and ongoing violations of Sections 301(a) and 402 of the CWA, 33 U.S.C. §§ 1311(a) and 1342, and the terms and conditions of its National Pollutant Discharge

COMPLAINT - 1

SMITH & LOWNEY, P.L.L.C.  
2317 EAST JOHN STREET  
SEATTLE, WASHINGTON 98112  
(206) 860-2883

1 Elimination System (“NPDES”) permit authorizing discharges of pollutants from Defendant’s  
2 Seattle, Washington, facility to navigable waters.

## 3 II. JURISDICTION AND VENUE

4 2. The Court has subject matter jurisdiction under Section 505(a) of the CWA, 33  
5 U.S.C. § 1365(a). The relief requested herein is authorized by 33 U.S.C. §§ 1319(d) and  
6 1365(a).  
7

8 3. Under Section 505 (b)(1)(A) of the CWA, 33 U.S.C. § 1365(b)(1)(A), Plaintiff  
9 notified Defendant of Defendant’s violations of the CWA and of Plaintiff’s intent to sue under  
10 the CWA by letter dated and postmarked July 24, 2020 and delivered July 27, 2020 (“Notice  
11 Letter”). A copy of the Notice Letter is attached to this complaint as Exhibit 1. The allegations  
12 in the Notice Letter are incorporated herein by this reference. Plaintiff notified Defendant’s  
13 Registered Agent, the Administrator of the United States Environmental Protection Agency  
14 (“USEPA”), the Administrator of USEPA Region 10, and the Director of the Washington  
15 Department of Ecology (“WDOE”) of its intent to sue Defendant by mailing copies of the Notice  
16 Letter to these officials on July 24, 2020.  
17

18 4. More than sixty days have passed since the notice was served and the violations  
19 complained of in the Notice Letter are continuing or are reasonably likely to continue to occur.  
20 Defendant is in violation of its NPDES permit and the CWA. Neither the USEPA nor the  
21 WDOE has commenced any action constituting diligent prosecution to redress these violations.  
22

23 5. The source of the violations complained of is located in King County,  
24 Washington, within the Western District of Washington, and venue is therefore appropriate in  
25 the Western District of Washington pursuant to Section 505(c)(1) of the CWA, 33 U.S.C. §  
26 1365(c)(1).  
27  
28

### III. PARTIES

6. Plaintiff Puget Soundkeeper Alliance (“Soundkeeper”) is suing on behalf of itself and its member(s). Soundkeeper is a non-profit corporation organized under the laws of the State of Washington. Soundkeeper is a membership organization and has at least one member who is injured by Defendant’s violations. Soundkeeper is dedicated to protecting and preserving Puget Sound including all waters flowing into Puget Sound and adjacent lands.

7. Plaintiff has representational standing to bring this action. Soundkeeper’s members are reasonably concerned about the effects of discharges of pollutants, including stormwater from Defendant’s facility, on aquatic species and wildlife that Plaintiff’s members observe, study and enjoy. Soundkeeper’s members are further concerned about the effect of discharges from Defendant’s facility on human health. In addition, discharges from Defendant’s facility lessen Soundkeeper’s members’ aesthetic enjoyment of nearby areas. Soundkeeper has members who live, work, fish and recreate around or use the Duwamish River, tributaries thereto, and waters to which the Duwamish River is tributary, Elliott Bay and Puget Sound. These members are affected by Defendant’s discharges and permit violations. Soundkeeper’s members’ concerns about the effects of Defendant’s discharges are aggravated by Defendant’s failure to record and report information about its discharges and pollution controls. The recreational, economic, aesthetic and/or health interests of Soundkeeper and its member(s) have been, are being, and will be adversely affected by Defendant’s violations of the CWA. The relief sought in this lawsuit can redress the injuries to these interests.

8. Plaintiff has organizational standing to bring this action. Soundkeeper has been actively engaged in a variety of educational and advocacy efforts to improve water quality and to address sources of water quality degradation in the waters of western Washington, including the

1 Duwamish River and Puget Sound. Defendant has failed to fulfill monitoring, recordkeeping,  
 2 reporting and planning requirements, among others, necessary for compliance with its NPDES  
 3 permit and the CWA. As a result, Plaintiff is deprived of information necessary to properly  
 4 serve its members by providing information and taking appropriate action to advance its mission.  
 5 Plaintiff's efforts to educate and advocate for greater environmental protection for the benefit of  
 6 its members are also precluded. Finally, Plaintiff and the public are deprived of information that  
 7 influences members of the public to become members of Soundkeeper, thereby reducing  
 8 Soundkeeper's membership numbers. Thus, Plaintiff's organizational interests have been  
 9 adversely affected by Defendant's violations. These injuries are fairly traceable to Defendant's  
 10 violations and redressable by the Court.

13 9. Defendant is a corporation authorized to conduct business under the laws of the  
 14 State of Washington.

15 10. Defendant owns and operates a facility used for railcar storage, switching,  
 16 maintenance, equipment and material storage and related activities, located at or about 402 S.  
 17 Dawson St., Seattle, WA, including contiguous or adjacent properties owned or operated by  
 18 Defendant (the "facility").

#### 20 IV. LEGAL BACKGROUND

21 11. Section 301(a) of the CWA, 33 U.S.C. § 1311(a), prohibits the discharge of  
 22 pollutants by any person, unless in compliance with the provisions of the CWA. Section 301(a)  
 23 prohibits, inter alia, such discharges not authorized by, or in violation of, the terms of a NPDES  
 24 permit issued pursuant to Section 402 of the CWA, 33 U.S.C. § 1342.

25 12. The State of Washington has established a federally approved state NPDES  
 26 program administered by the WDOE. Wash. Rev. Code § 90.48.260; Wash. Admin. Code ch.  
 27

1 173-220. This program was approved by the Administrator of the USEPA pursuant to 33 U.S.C.  
2 § 1342(b).

3 13. Pursuant to Section 402(a) of the CWA, 33 U.S.C. § 1342(a), the WDOE has  
4 repeatedly issued the Industrial Stormwater General Permit, most recently on November 20,  
5 2019, (the “General Permit”). The General Permit, in its various iterations since its first issuance  
6 in 1993 containing comparable requirements, authorizes those that obtain coverage under the  
7 General Permit to discharge stormwater, a pollutant under the CWA, and other pollutants  
8 contained in the stormwater to the waters of the State subject to certain terms and conditions.  
9

10 14. The General Permit imposes certain terms and conditions on those covered  
11 thereby, including monitoring and sampling of discharges, reporting and recordkeeping  
12 requirements. To reduce and eliminate pollutant concentrations in stormwater discharges, the  
13 General Permit requires, among other things, that Permittees develop and implement best  
14 management practices (“BMPs”) and a Stormwater Pollution Prevention Plan (“SWPPP”), and  
15 apply all known and reasonable methods of prevention, control and treatment (“AKART”) to  
16 discharges. When a Permittee’s stormwater discharge exceeds benchmark values for  
17 concentrations of certain pollutants (and action levels for concentrations of certain pollutants in a  
18 previous version of the General Permit), the General Permit requires the Permittee to complete  
19 the applicable Level 1, 2, or 3 corrective action requirements. The specific terms and conditions  
20 of the General Permit are described in detail in the Notice Letter, attached hereto as Exhibit 1,  
21 and incorporated herein by this reference.  
22  
23  
24

## 25 V. FACTS

26 15. Pursuant to Condition S2 of the General Permit, Defendant filed with the WDOE  
27 an Application for General Permit to Discharge Stormwater Associated with Industrial Activity.  
28

WDOE granted Defendant coverage under the General Permit for Defendant's facility under Permit Number WAR001155. WDOE previously granted Defendant coverage under an earlier version of the General Permit for Defendant's facility under Permit Number SO3001155.

16. Defendant's facility is engaged in industrial activity and discharges stormwater and other pollutants to the Duwamish River via drains, pipes, ditches, runoff, municipal storm sewer system and the ground.

17. Discharges from Defendant's facility contribute to the polluted conditions of the waters of the State, including to the sediment and water quality impairment of the Duwamish River. Discharges from Defendant's facility contribute to the ecological impacts that result from the polluted state of these waters and to Plaintiff's and their members' injuries resulting therefrom. The requirement not to cause or contribute to violations of water quality standards, General Permit Condition S10.A, and Defendant's violations thereof are described in section I of the Notice Letter, attached hereto as Exhibit 1, and are incorporated herein by this reference. Defendant has caused or contributed to violations of water quality standards for turbidity, copper, zinc, oil, designated uses and aesthetics in the Duwamish River, including every day Defendant discharged pollutant concentrations in excess of the General Permit benchmarks or maximum daily limits.

18. The vicinity of the facility, the Duwamish River and Elliott Bay are used by the citizens of Washington and visitors, as well as at least one of Plaintiff's members, for recreational activities, including boating, biking, fishing and nature watching. Plaintiff's member(s) also derive(s) aesthetic, spiritual and cultural benefits from the receiving waters. Plaintiff's and its members' enjoyment of these activities and waters is diminished by the polluted state of the receiving waters and by Defendant's contributions to such polluted state.

1           19. Defendant has violated the General Permit and Sections 301(a) and 402 of the  
2 CWA, 33 U.S.C. §§ 1311(a) and 1342, by discharging pollutants in violation of an NPDES  
3 Permit. Defendant's violations of the General Permit and the CWA are set forth in full in  
4 sections I through VIII of the Notice Letter, attached hereto as Exhibit 1, and are incorporated  
5 herein by this reference. In particular and among the other violations described in the Notice  
6 Letter, Defendant has failed to collect representative discharge samples, failed to prepare and  
7 implement a compliant SWPPP, failed to comply with corrective action requirements, violated  
8 daily effluent limits, and failed to implement best management practices to control stormwater  
9 quality as required by the General Permit.  
10

11           20. Defendant has discharged stormwater containing levels of pollutants that exceed  
12 the benchmark values and numeric effluent limits established in the General Permit, as specified  
13 in Tables 1 and 2 below. Defendant's stormwater discharges are causing or contributing to  
14 violations of water quality standards and therefore violate the General Permit, Condition S10.A.  
15 Additionally, Defendant's exceedances of the benchmark values and effluent limits demonstrate  
16 that Defendant is failing to apply AKART to its discharges and/or is failing to implement an  
17 adequate SWPPP and BMPs. These requirements and violations are described in detail in  
18 section I of the Notice Letter, attached hereto as Exhibit 1, and are incorporated herein by this  
19 reference.  
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23           21. Defendant has sampled its stormwater discharges in the calendar quarters  
24 identified in Table 1 of this Complaint and determined that such discharges contained pollution  
25 in amounts exceeding benchmarks, as shown in Table 1.  
26  
27  
28  
29

**Table 1 – Facility Benchmark Exceedances**

Quarter in which sample collected (sample location no.)	Turbidity (Benchmark 25 NTU)	Oil/Grease (Benchmark no sheen)	Copper (Benchmark 14 µg/L)	Zinc (Benchmark 117 µg/L)
2Q 2019 (001)	<b>28.3 NTU</b>			
2Q 2019 (002)	<b>37.2</b>			
2Q 2019 (004)	<b>166</b>		<b>36.4 µg/L</b>	<b>355 µg/L</b>
2Q 2019 (005)	<b>100</b>	<b>Yes</b>	<b>22</b>	<b>263</b>
2Q 2019 (006)	<b>103</b>		<b>22.6</b>	<b>268</b>
3Q 2019 (004)			<b>14.95</b>	
1Q 2020 (004)	<b>30</b>			

22. The stormwater samples identified in Table 1 are representative of and accurately characterize the quality of stormwater discharges generated by the facility during the associated calendar quarter.

23. Defendant discharges to the Duwamish River, which is 303(d) listed for sediment quality and Defendant has violated the General Permit's corresponding numeric effluent limit for Total Suspended Solids (TSS), Condition S6.C, Table 6. Defendant has sampled its stormwater discharges on the dates identified in Table 2 of this Complaint and determined that such discharges contain pollution in amounts exceeding maximum daily effluent limits for TSS, as shown in Table 2. These General Permit violations are reasonably likely to recur.

**Table 2 – Facility Numeric Effluent Limit Violations**

Quarter in which sample collected (outfall number)	Total Suspended Solids (TSS) concentration (limitation: 30 mg/L)
2Q 2019 (004)	<b>95 mg/L</b>
2Q 2019 (005)	<b>49 mg/L</b>
2Q 2019 (006)	<b>55 mg/L</b>

24. Defendant has not developed and/or implemented a SWPPP in accordance with the requirements of the General Permit, Condition S3. Defendant's SWPPP does not specify all

1 of the BMPs that are necessary to provide AKART and to ensure that discharges do not cause or  
2 contribute to violations of water quality standards, and does not include all of the specific  
3 requirements of the General Permit, including certain mandatory BMPs, a compliant facility  
4 assessment, a compliant inventory of industrial activities and materials, a compliant site map,  
5 compliant maintenance BMPs and a compliant sampling plan, among other deficiencies. These  
6 SWPPP requirements and violations are described in detail in section II of the Notice Letter,  
7 attached hereto as Exhibit 1, and are incorporated herein by this reference.  
8

9         25. Defendant has violated the monitoring requirements in the General Permit,  
10 Conditions S4 and S9.B and E. Defendant has failed to collect representative stormwater  
11 samples and/or submit discharge monitoring reports for all distinct discharge points during all  
12 quarters as required by the General Permit.  
13

14         26. Defendant failed to collect stormwater samples and/or to submit DMRs for  
15 Outfalls 002, 003, 004, 005, and 006 at all between 4<sup>th</sup> Quarter 2015 and 2<sup>nd</sup> Quarter 2019.  
16 These monitoring requirements and violations are described in section III.A of the Notice Letter,  
17 attached hereto as Exhibit 1, and are incorporated herein by this reference.  
18

19         27. Defendant failed to collect stormwater samples and/or to submit DMRs for the  
20 following discharge points at all in the last five years: points of discharge from two separate and  
21 distinct chassis storage areas, discharges from area MSH-5, discharges from area VM-1,  
22 discharges from area VM-8, discharges from area DTL-1, points of discharge from a drainage  
23 area south of System B, points of discharge from access roads throughout the facility that do not  
24 drain to any of the currently identified sample points, points of discharge from the Packer  
25 Staging Area that do not flow to System B, points of discharge from the railyard at the northeast  
26 of the facility including discharges that flow to Systems X1 or X2, and other discrete points of  
27  
28

1 runoff along the perimeter of the facility. These monitoring requirements and violations are  
2 described in section III.A of the Notice Letter, attached hereto as Exhibit 1, and are incorporated  
3 herein by this reference.

4 28. Defendant has not reported all sampling results on Defendant's quarterly DMR as  
5 required by the General Permit, Condition S9.E.

6 29. Defendant has not conducted and/or documented inspections as required by the  
7 General Permit, Condition S7. These inspection requirements and violations are described in  
8 detail in section III.B of the Notice Letter, attached hereto as Exhibit 1, and are incorporated  
9 herein by this reference.

10 30. Defendant has not implemented maintenance of facility stormwater systems as  
11 required by the General Permit, Conditions S3.B.4.b.i.2-3 and S7.B.6, including maintenance of  
12 System Z.

13 31. Defendant has not conducted and/or completed the corrective action responses as  
14 required by the General Permit. Condition S8.B of the General Permit requires a permittee to  
15 undertake a Level 1 corrective action whenever it exceeds a benchmark value identified in  
16 Condition S5. A Level 1 corrective action comprises an inspection to investigate the cause of the  
17 benchmark exceedance within 14 days of receipt of the corresponding sample results, review of  
18 the SWPPP to ensure permit compliance, revisions to the SWPPP to include additional  
19 operational source control BMPs with the goal of achieving the applicable benchmark values in  
20 future discharges, including signature and certification of the revised SWPPP, summary of the  
21 Level 1 corrective action in the annual report, and full implementation of the revised, signed and  
22 certified SWPPP as soon as possible, but no later than the DMR due date for the quarter the  
23 benchmark was exceeded. Defendant was required to complete a Level 1 corrective action for  
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every benchmark exceedance identified in Table 1 above. Defendant has not completed all of these corrective actions as required. These corrective action requirements and violations are described in section IV.A of the Notice Letter, attached hereto as Exhibit 1, and are incorporated herein by this reference.

32. Condition S8.C. of the General Permit requires a permittee to undertake a Level 2 corrective action whenever it exceeds a benchmark value for any two quarters during a calendar year. A Level 2 corrective action comprises review of the SWPPP to ensure permit compliance, revision of the SWPPP to include additional structural source control BMPs with the goal of achieving the benchmark in future discharges, including signature and certification of the revised SWPPP in accordance with Condition S3.A.5, summary of the Level 2 corrective action (planned or taken) in the annual report, and full implementation of the revised SWPPP by August 31st of the following year, including installation of necessary structural source control BMPs. Defendant triggered Level 2 corrective action requirements for copper in 2019. Defendant has not completed all of the corrective actions as required. These corrective action requirements and violations are described in section IV.B of the Notice Letter, attached hereto as Exhibit 1, and are incorporated herein by this reference.

33. Defendant has violated the recordkeeping requirements of the General Permit. The recordkeeping requirements are outlined in Conditions S4.B.4-5 and S9.D of the General Permit.<sup>1</sup> General Permit Condition S4.B.4 requires recording and retention of specified information for each stormwater sample taken. General Permit Condition S9.D requires the retention of the records identified for a minimum of five (5) years. Defendant is in violation of

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<sup>1</sup> These requirements were outlined in the prior iteration of the General Permit, effective January 2, 2015 and expired December 31, 2019 (the "2015 Permit"), at Conditions S4.B.3-4 and S9.C.

1 these conditions by failing to record and retain the sampling documentation of Condition S4.B.4,  
2 the inspection documentation of Condition S7, equipment calibration records, all BMP  
3 maintenance records, all original recordings for continuous sampling instrumentation, copies of  
4 all laboratory reports as described in S3.B.5, all DMRs, or copies of any other reports required  
5 by the Permit for the specified five-year period.  
6

7 34. Defendant has violated the reporting requirements of the General Permit,  
8 Condition S9.C and F.<sup>1</sup> For example, Defendant submitted annual reports that did not include all  
9 the required elements and did not report General Permit violations as required. These reporting  
10 requirements and violations are described in section VIII of the Notice Letter, attached hereto as  
11 Exhibit 1, and are incorporated herein by this reference.  
12

13 35. A significant penalty should be imposed against Defendant pursuant to the  
14 penalty factors set forth in 33 U.S.C. § 1319(d).  
15

16 36. Defendant's violations of the CWA degrade the environment and the water  
17 quality of the receiving water bodies.

18 37. Defendant's violations were avoidable had Defendant been diligent in overseeing  
19 facility operations and maintenance.

20 38. Defendant has benefited economically as a consequence of its violations and its  
21 failure to implement improvements at the facility.  
22

23 39. Defendant is the principal operating company of Union Pacific Corporation, an  
24 extremely profitable publicly traded business enterprise with over \$20 billion of operating  
25 revenue in 2019, over \$60 billion in assets and billions of dollars of annual profit. Given its size  
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27  
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29 <sup>1</sup> 2015 Permit Conditions S9.B and E.  
COMPLAINT - 12

1 and resources, Defendant can afford to pay a significant penalty. Indeed, such penalty is  
2 required to meet the deterrence goals of the Clean Water Act's penalty factors.

3 **VI. CAUSE OF ACTION**

4 40. The preceding paragraphs and the allegations in sections I through VIII of the  
5 Notice Letter are incorporated herein.

6  
7 41. Defendant's violations of its NPDES permit described herein and in the Notice  
8 Letter constitute violations of "effluent standard(s) or limitation(s)" as defined by section 505, 33  
9 U.S.C. § 1365.

10  
11 42. The violations committed by Defendant are ongoing or are reasonably likely to  
12 continue to occur. Any and all additional violations of the General Permit and the CWA which  
13 occur after those described in Plaintiff's Notice Letter but before a final decision in this action  
14 should be considered continuing violations subject to this Complaint.

15  
16 43. Without the imposition of appropriate civil penalties and the issuance of an  
17 injunction, Defendant is likely to continue to violate the General Permit and the CWA to the  
18 further injury of the Plaintiff, its member(s) and others.

19  
20 44. A copy of this Complaint was served upon the Attorney General of the United  
21 States and the Administrator of the USEPA as required by 33 U.S.C. § 1365(c)(3).

22 **VII. RELIEF REQUESTED**

23 Wherefore, Plaintiff respectfully requests that this Court grant the following relief:

24 A. Issue a declaratory judgment that Defendant has violated and continues to be in  
25 violation of the General Permit and Sections 301 and 402 of the Clean Water Act, 33 U.S.C. §§  
26 1311 and 1342;  
27  
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1 B. Enjoin Defendant from operating its facility in a manner that results in further  
2 violations of the General Permit or the Clean Water Act;

3 C. Order Defendant to immediately implement a Storm Water Pollution Prevention  
4 Plan that is in compliance with the General Permit, and to provide Plaintiff with a copy of this  
5 Plan;

6  
7 D. Order Defendant to allow Plaintiff to participate in the development and  
8 implementation of Defendant's Storm Water Pollution Prevention Plan;

9 E. Order Defendant to provide Plaintiff, for a period beginning on the date of the  
10 Court's Order and running for one year after Defendant achieves compliance with all of the  
11 conditions of the General Permit, with copies of all reports and other documents which  
12 Defendant submits to the USEPA or to the WDOE regarding Defendant's coverage under the  
13 General Permit at the time it is submitted to these authorities;

14  
15 F. Order Defendant to take specific actions to remediate the environmental harm  
16 caused by its violations;

17  
18 G. Order Defendant to pay civil penalties of \$55,800.00 per day of violation for each  
19 violation committed by Defendant since November 2, 2015 and \$37,500.00 per day of violation  
20 for each violation committed by Defendant before November 2, 2015 pursuant to Sections  
21 309(d) and 505(a) of the CWA, 33 U.S.C. §§ 1319(d) and 1365(a), and 40 C.F.R. § 19;

22  
23 H. Award Plaintiff their litigation expenses, including reasonable attorneys' and  
24 expert witness fees, as authorized by Section 505(d) of the CWA, 33 U.S.C. § 1365(d); and

25 I. Award such other relief as this Court deems appropriate.  
26  
27  
28

1 RESPECTFULLY SUBMITTED this 7th day of October, 2020.

2  
3 **SMITH & LOWNEY, PLLC**

4 By: s/Knoll Lowney  
Knoll Lowney, WSBA #23457  
5 By: s/Marc Zemel  
Marc Zemel, WSBA #44325  
6 Attorneys for Plaintiff  
7 2317 E. John St.,  
Seattle, WA 98112  
8 Tel: (206) 860-2124  
9 Fax: (206) 860-4187  
10 E-mail: knoll@smithandlowney.com  
marc@smithandlowney.com

11  
12  
13 **PUGET SOUNDKEEPER ALLIANCE**

14 By: s/Katelyn Kinn  
Katelyn Kinn, WSBA # 42686  
15 130 Nickerson Street, Suite 107  
16 Seattle, WA 98109  
17 Tel: (206) 297-7002  
Fax: (206) 297-0409  
18 E-mail: katelyn@pugetsoundkeeper.org

*EXHIBIT 1*

**SMITH & LOWNEY, P.L.L.C.**

2317 EAST JOHN STREET  
SEATTLE, WASHINGTON 98112  
(206) 860-2883, FAX (206) 860-4187

July 24, 2020

**Via Certified Mail - Return Receipt Requested**

Managing Agent  
Union Pacific Railroad Company  
Argo Yard  
402 South Dawson Street  
Seattle, WA 98108

Managing Agent  
Union Pacific Railroad Company  
1400 Douglas Street  
Omaha, NE 68179-1001

Managing Agent  
Union Pacific Railroad Company  
301 NE 2<sup>nd</sup> Ave  
Portland, OR 97232-2764

**Re: NOTICE OF INTENT TO SUE UNDER THE CLEAN WATER ACT AND  
REQUEST FOR COPY OF STORMWATER POLLUTION PREVENTION  
PLAN**

Dear Managing Agent:

We represent Puget Soundkeeper Alliance (“Soundkeeper”), 130 Nickerson St. #107, Seattle, WA 98109, (206) 297-7002. Any response or correspondence related to this matter should be directed to us at the letterhead address. This letter is to provide you with sixty days’ notice of Soundkeeper’s intent to file a citizen suit against Union Pacific Railroad Company (“Union Pacific”) under section 505 of the Clean Water Act (“CWA”), 33 U.S.C. § 1365, for the violations described below. This letter is also a request for a copy of the complete and current stormwater pollution prevention plan (“SWPPP”) required by Union Pacific’s National Pollution Discharge Elimination System (“NPDES”) permit.

Union Pacific was granted coverage under Washington’s Industrial Stormwater General Permit (“ISGP”) issued by the Washington Department of Ecology (“Ecology”) effective January 2, 2015 and expired on December 31, 2019 under NPDES No. WAR001155 (the “2015 Permit”). Ecology granted Union Pacific coverage under the current iteration of the ISGP effective January 1, 2020, and set to expire on December 31, 2024 (the “2020 Permit”) and maintains the same permit number, WAR001155.

As detailed below, Union Pacific has violated and continues to violate the CWA (see Sections 301 and 402 of the CWA, 33 U.S.C. §§ 1311 and 1342) and the terms and conditions of the 2015 Permit and the 2020 Permit (collectively, the “Permits”) with respect to operations of, and discharges of stormwater and pollutants from, its facility located at or about 402 S. Dawson Street, Seattle, WA 98108 (the “facility” or “Argo Yard”) to the Duwamish River. Condition S1.A of the Permits requires that all discharges and activities authorized be consistent with the terms and conditions of the permits. Union Pacific has violated these conditions by discharging and acting inconsistent with the conditions of the Permits as described in this notice of intent to sue. The facility subject to this notice includes any contiguous or adjacent properties owned or operated by Union Pacific.

## **I. COMPLIANCE WITH STANDARDS.**

### **A. Violations of Water Quality Standards.**

Condition S10.A of the Permits prohibits discharges that cause or contribute to violations of water quality standards. Water quality standards are the foundation of the CWA and Washington’s efforts to protect clean water. In particular, water quality standards represent the U.S. Environmental Protection Agency (“EPA”) and Ecology’s determination, based on scientific studies, of the thresholds at which pollution starts to cause significant adverse effects on fish or other beneficial uses. For each water body in Washington, Ecology designates the “beneficial uses” that must be protected through the adoption of water quality standards.

A discharger must comply with both narrative and numeric criteria water quality standards. WAC 173-201A-010; WAC 173-201A-510 (“No waste discharge permit can be issued that causes or contributes to a violation of water quality criteria, except as provided for in this chapter.”). Narrative water quality standards provide legal mandates that supplement the numeric criteria. Furthermore, a narrative water quality standard applies with equal force even if Ecology has established a numeric water quality standard. Condition S10.A of the Permits specifically requires that Union Pacific’s discharges not cause or contribute to an excursion of Washington State water quality standards.

Union Pacific discharges via a municipal stormwater system to a segment of the Duwamish River that does not meet water quality standards for sediment quality and is included on the state’s “303(d) list” of impaired water bodies. Union Pacific discharges stormwater that contains elevated levels of turbidity, total suspended solids, oil & grease, copper and zinc, as indicated in Tables 1 and 2 below. Moreover, the discharges Union Pacific has sampled and reported underrepresent the polluted condition of its facility discharges, as explained further at sections III.A and V of this Notice Letter. These discharges cause and/or contribute to violations of water quality standards for turbidity, dissolved oxygen, zinc, copper, designated uses and aesthetics in the Duwamish and have occurred each and every day during the last five years on which there was 0.1 inch or more of precipitation, and continue to occur. See WAC 173-201A-200, 173-201A-240, 173-201A-260, 173-201A-600 and 602. Precipitation data from that time period is appended to this notice of intent to sue and identifies these days.

**Table 1: Benchmark Exceedances**

Quarter in which sample collected (sample location no.)	Turbidity (Benchmark 25 NTU)	Oil/Grease (Benchmark no sheen)	Copper (Benchmark 14 µg/L)	Zinc (Benchmark 117 µg/L)
2Q 2019 (001)	<b>28.3 NTU</b>			
2Q 2019 (002)	<b>37.2</b>			
2Q 2019 (004)	<b>166</b>		<b>36.4 µg/L</b>	<b>355 µg/L</b>
2Q 2019 (005)	<b>100</b>	<b>Yes</b>	<b>22</b>	<b>263</b>
2Q 2019 (006)	<b>103</b>		<b>22.6</b>	<b>268</b>
3Q 2019 (004)			<b>14.95</b>	
1Q 2020 (004)	<b>30</b>			

## II. STORMWATER POLLUTION PREVENTION PLAN AND BEST MANAGEMENT PRACTICES VIOLATIONS.

Condition S10.C of the Permits requires Union Pacific to apply all known and reasonable methods of prevention, control and treatment (“AKART”) to all discharges, including preparation and implementation of an adequate SWPPP and best management practices (“BMPs”). Union Pacific has violated and continues to violate these conditions by failing to apply AKART to its discharges or to implement an adequate SWPPP and BMPs as evidenced by the elevated levels of pollutants in its discharge indicated in Table 1 above and Table 2 below, and as described below in this notice of intent to sue.

Union Pacific is in violation of the Permits’ SWPPP provisions as follows:

1. Condition S3.A of the Permits requires Union Pacific to develop and implement a SWPPP as specified. Condition S3.A.2 of the 2015 Permit and S3.A.1 of the 2020 Permit require the SWPPP to specify BMPs necessary to provide AKART and ensure that discharges do not cause or contribute to violations of water quality standards. Union Pacific has violated these requirements of the Permits each and every day during the last five years and continues to violate them as it has failed to prepare and/or implement a SWPPP that includes AKART BMPs and BMPs necessary to comply with state water quality standards for all its discharges.

2. Condition S3.A of the Permits requires Union Pacific to have and implement a SWPPP that is consistent with permit requirements, fully implemented as directed by permit conditions, and updated as necessary to maintain compliance with permit conditions. Union Pacific has violated these requirements of the Permits each and every day during the last five years and continues to violate them because its SWPPP is not consistent with permit requirements, has not been fully implemented and has not been updated as necessary.

3. The SWPPP fails to satisfy the requirements of Condition S3 of the Permits because it does not adequately describe BMPs. Condition S3.B.4 of the Permits require that the SWPPP include a description of the BMPs that are necessary for the facility to eliminate or reduce the potential to contaminate stormwater. Condition S3.A.3 of the 2015 Permit and

S3.A.2 of the 2020 Permit require that the SWPPP include BMPs consistent with approved stormwater technical manuals or document how stormwater BMPs included in the SWPPP are demonstratively equivalent to the practices contained in the approved stormwater technical manuals, including the proper selection, implementation, and maintenance of all applicable and appropriate BMPs. *See Stormwater Management Manual for Western Washington*, July 2019,

<https://fortress.wa.gov/ecy/ezshare/wq/Permits/Flare/2019SWMMWW/Content/Resources/DocsForDownload/2019SWMMWW.pdf>. Union Pacific's SWPPP does not comply with these

requirements because it does not adequately describe BMPs and does not include BMPs consistent with approved stormwater technical manuals nor does it include BMPs that are demonstratively equivalent to such BMPs with documentation of BMP adequacy across the entire facility.

4. Union Pacific's SWPPP fails to satisfy the requirements of Condition S3.B.2 of the Permits because it fails to include a facility assessment as mandated. The SWPPP fails to include an adequate facility assessment because it does not describe the industrial activities conducted at all locations in the site, the general layout of the entire facility including buildings and storage of raw materials or equipment, the flow of goods and materials through the whole facility, regular business hours and seasonal variations in business hours or in industrial activities as required.

5. Union Pacific's SWPPP fails to satisfy the requirements of Condition S3.B.1 of the Permits because it does not include a site map that identifies significant features, the stormwater drainage and discharge structures, the stormwater drainage areas for each stormwater discharge point off-site (including discharges to groundwater), direction of stormwater flow with arrows, a unique identifying number for each discharge point (indicating any that are identified as substantially identical), each sampling location with a unique identifying number, any other party other than Union Pacific that owns any stormwater drainage or discharge structures, locations of all structural source control BMPs, impervious areas and buildings, areas of pollutant contact associated with specific industrial activities, conditionally approved non-stormwater discharges, surface water locations, locations of all stormwater conveyances, areas of existing and potential soil erosion, all vehicle maintenance areas, and lands and waters adjacent to the site that may be helpful in identifying discharge points or drainage routes.

6. Union Pacific's SWPPP fails to comply with Condition S3.B.2.b of the Permits because it does not include an inventory of industrial activities that identifies all areas associated with industrial activities that have been or may potentially be sources of pollutants as required. The SWPPP does not identify all areas associated with loading and unloading of dry bulk materials or liquids, outdoor storage of materials or products, outdoor manufacturing and processing, onsite dust or particulate generating processes, on-site waste treatment, storage, or disposal, all access roads, vehicle and equipment fueling, maintenance, and/or cleaning, roofs or other surfaces exposed to air emissions from a manufacturing building or a process area, and roofs or other surfaces composed of materials that may be mobilized by stormwater as required by these conditions.

7. Union Pacific's SWPPP does not comply with Condition S3.B.2.c of the Permits because it does not include an adequate inventory of materials. The SWPPP does not include an inventory of materials that lists the types of materials handled at each area of the site that potentially may be exposed to precipitation or runoff and that could result in stormwater pollution, a short narrative for material describing the potential for the pollutants to be present in stormwater discharge that is updated when data becomes available to verify the presence or absence of the pollutants, a narrative description of any potential sources of pollutants from past activities, materials and spills that were previously handled, treated, stored, or disposed of in a manner to allow ongoing exposure to stormwater as required. The SWPPP does not include the method and location of on-site storage or disposal of such materials and a list of significant spills and significant leaks of toxic or hazardous pollutants as these permit conditions require.

8. Union Pacific's SWPPP does not comply with Condition S3.B.3 of the Permits because it does not identify specific individuals by name or title whose responsibilities include SWPPP development, implementation, maintenance and modification.

9. Condition S3.B.4 of the Permits require that permittees include in their SWPPPs and implement certain mandatory BMPs unless site conditions render the BMP unnecessary, infeasible, or an alternative and equally effective BMP is provided. Union Pacific is in violation of this requirement because it has failed to include in its SWPPP and implement the mandatory BMPs of the Permits.

10. Union Pacific's SWPPP does not comply with Condition S3.B.4.b.i of the Permits because it does not include required operational source control BMPs for every area of the facility in the following categories: good housekeeping (including definition of ongoing maintenance and cleanup of areas that may contribute pollutants to stormwater discharges, and a schedule/frequency for each housekeeping task); preventive maintenance (including BMPs to inspect and maintain stormwater drainage, source controls, treatment systems, and plant equipment and systems, and the schedule/frequency for each task); spill prevention and emergency cleanup plan (including BMPs to prevent spills that can contaminate stormwater, for material handling procedures, storage requirements, cleanup equipment and procedures, and spill logs); employee training (including an overview of what is in the SWPPP, how employees make a difference in complying with the SWPPP, spill response procedures, good housekeeping, maintenance requirements, and material management practices, how training will be conducted, the frequency/schedule of training, and a log of the dates on which specific employees received training); inspections and recordkeeping (including documentation of procedures to ensure compliance with permit requirements for inspections and recordkeeping, identification of personnel who conduct inspections, provision of a tracking or follow-up procedure to ensure that a report is prepared and appropriate action taken in response to visual monitoring, definition of how Union Pacific will comply with signature and record retention requirements, and certification of compliance with the SWPPP and Permit).

11. Union Pacific's SWPPP does not comply with Condition S3.B.4.b.i.7 of the Permits because it does not include measures to identify and eliminate the discharge of process wastewater, domestic wastewater, noncontact cooling water, and other illicit

discharges to stormwater sewers, or to surface waters and ground waters of the state from each portion of the facility.

12. Union Pacific's SWPPP does not comply with Condition S3.B.4.b.ii of the Permits because it does not include required structural source control BMPs to minimize the exposure of manufacturing, processing, and material storage areas to rain, snow, snowmelt, and runoff. Union Pacific's SWPPP does not comply with Condition S3.B.4.b.iii of the Permits because it does not include treatment BMPs as required.

13. Union Pacific's SWPPP fails to comply with Condition S3.B.4.b.v of the Permits because it does not include BMPs to prevent the erosion of soils or other earthen materials and prevent off-site sedimentation and violations of water quality standards.

14. Union Pacific's SWPPP fails to satisfy the requirements of Condition S3.B.5 of the Permits because it fails to include a stormwater sampling plan as required. The SWPPP does not include a sampling plan that: identifies all points of discharge to surface waters, storm sewers, or discrete ground water infiltration locations; documents why each discharge point is not sampled with discussion of each of the documentation required; identifies each sampling point by its unique identifying number; identifies staff responsible for conducting stormwater sampling; specifies procedures for sampling collection and handling; specifies procedures for sending samples to the a laboratory; identifies parameters for analysis, holding times and preservatives, laboratory quantization levels, and analytical methods, and that specifies the procedure for submitting the results to Ecology.

### **III. MONITORING AND REPORTING VIOLATIONS.**

#### **A. Failure to Collect Quarterly Samples.**

Condition S4.B of the Permits requires Union Pacific to collect representative samples of its stormwater discharge once during every calendar quarter. Conditions S3.B.2.c of the 2015 Permit and S4.B.3.a of the 2020 Permit require Union Pacific to collect stormwater samples at each distinct point of discharge offsite except for substantially identical outfalls, in which case only one of the substantially identical outfalls must be sampled. These conditions set forth sample collection criteria and require the collection of a sample even if the criteria cannot be met. The facility has dozens of distinct points of discharge off-site, including but not limited to Outfalls SW-001 through 006, points of discharge from two separate chassis storage areas, discharges from areas MSH-5, VM-1, VM-8, and DTL-1, points of discharge from an area south of System B, points of discharge from access roads throughout the facility that do not drain to any of the currently identified sample points, points of discharge from the Packer Staging Area that do not flow to System B, various points of discharge from the railyard at the northeast of the facility including discharges that flow to Systems X1 or X2, and various other discrete points of runoff along the perimeter of the facility.

Union Pacific has violated and continues to violate these conditions because it does not sample each distinct point of discharge off-site. These failures underrepresent the polluted condition of the facility's discharges, which is also a violation of the requirement to

collect representative samples. *See* Permit Appendix 2 (defining “representative”). These failures are also violations of the Discharge Monitoring Report conditions of Permit Condition S9.B. All these violations have occurred and continue to occur each and every quarter during the last five years that Union Pacific was and is required to sample its stormwater discharges, including the quarters in which it collected stormwater discharge samples from some, but not all, points of discharge. These violations will continue until Union Pacific commences monitoring and reporting all distinct points of discharge.

#### **B. Failure to Comply with Visual Monitoring Requirements.**

Conditions S7.A and B of the Permits requires that monthly visual inspection be conducted at the facility by qualified personnel. Each inspection is to include observations made at stormwater sampling locations and all areas where stormwater associated with industrial activity is discharged, observations for the presence of floating materials, visible oil sheen, discoloration, turbidity, odor, etc. in the stormwater discharges, observations for the presence of illicit discharges, a verification that the descriptions of potential pollutant sources required by the permit are accurate, a verification that the site map in the SWPPP reflects current conditions, and an assessment of all BMPs that have been implemented (noting the effectiveness of the BMPs inspected, the locations of BMPs that need maintenance, the reason maintenance is needed and a schedule for maintenance, and locations where additional or different BMPs are needed).

Condition S7.C of the Permits requires that Union Pacific record the results of each inspection in an inspection report or checklist maintained on-site that documents the required observations, verifications, and assessments. The report/checklist must include the time and date of the inspection, the locations inspected, a statement that, in the judgment of the person conducting the inspection and the responsible corporate officer, the facility is either in compliance or out of compliance with the SWPPP and the Permits, a summary report and schedule of implementation of the remedial actions that Union Pacific plans to take if the site inspection indicates that the facility is out of compliance, the name, title, signature and certification of the person conducting the facility inspection, and a certification and signature of the responsible corporate officer or a duly authorized representative.

Union Pacific is in violation of these requirements of Condition S7 of the Permits because, during the last five years, it has failed to conduct each of the requisite visual monitoring and inspections, failed to prepare and maintain the requisite inspection reports or checklists, and failed to make the requisite certifications and summaries.

### **IV. CORRECTIVE ACTION VIOLATIONS.**

#### **A. Violations of the Level One Requirements.**

Condition S8.B of the Permits requires Union Pacific take specified actions, called a “Level One Corrective Action,” each time quarterly stormwater sample results exceed a benchmark value or are outside the benchmark range for pH.

As described by Condition S8.B of the Permits, a Level One Corrective Action requires Union Pacific to: (1) review the SWPPP for the facility and ensure that it fully complies with Condition S3 of the Permits and contains the correct BMPs from the applicable Stormwater Management Manual; (2) make appropriate revisions to the SWPPP to include additional operational source control BMPs with the goal of achieving the applicable benchmark values in future discharges and sign and certify the revised SWPPP in accordance with Condition S3.A.6 of the Permits; and (3) summarize the Level One Corrective Action in the Annual Report required under Condition S9.B of the Permits. Condition S8.B.4 of the Permits require Union Pacific implement the revised SWPPP as soon as possible, and no later than the DMR due date for the quarter the benchmark was exceeded.

Condition S5.A and Table 2 of the Permits establishes the following benchmarks: turbidity 25 NTU; no observed oil sheen; pH 5 – 9 SU; total copper 14 µg/L; and total zinc 117 µg/L. Condition S5.B and Table 3 of the Permits establish the following additional benchmark for transportation facilities applicable to Union Pacific: Petroleum Hydrocarbons (Diesel Fraction) – 10 mg/L.

Union Pacific has violated the requirements of the Permits described above by failing to conduct a Level One Corrective Action in accordance with permit conditions, including the required review, revision and certification of the SWPPP, the required implementation of additional BMPs, and the required summarization in the annual report each time since July 1, 2015, its quarterly stormwater sampling results were greater than a benchmark value or outside the benchmark range for pH, including the benchmark excursions listed in Table 1 above.

#### **B. Violations of the Level Two Requirements.**

Condition S8.C of the Permits requires Union Pacific take specified actions, called a “Level Two Corrective Action,” each time quarterly stormwater sample results exceed an applicable benchmark value or are outside the benchmark range for pH for any two quarters during a calendar year. The Permits establish the benchmarks applicable to Union Pacific, as described above in section IV.A of this notice of intent to sue letter.

As described by Condition S8.C of the Permits, a Level Two Corrective Action requires Union Pacific: (1) review the SWPPP for the facility and ensure that it fully complies with Condition S3 of the Permits; (2) make appropriate revisions to the SWPPP to include additional structural source control BMPs with the goal of achieving the applicable benchmark value(s) in future discharges and sign and certify the revised SWPPP in accordance with Condition S3.A.6 of the 2015 Permit and S3.A.5 of the 2020 Permit; and (3) summarize the Level Two Corrective Action (planned or take) in the Annual Report required under Condition S9.B of the 2015 Permit and S9.C of the 2020 Permit. Condition S8.C.4 of the Permits require Union Pacific implement the revised SWPPP according to condition S3 of the Permits and the applicable stormwater management manual as soon as possible, and no later than August 31st of the following year.

Union Pacific has violated the requirements of the Permits described above by failing to conduct a Level Two Corrective Action in accordance with permit conditions, including the required review, revision and certification of the SWPPP, the required implementation of additional BMPs, including additional structural source control BMPs, and the required summarization in the annual report each time since July 1, 2015, its quarterly stormwater sampling results were greater than a benchmark or outside the benchmark range for pH for any two quarters during a calendar year. As indicated in Table 1 above, Union Pacific triggered Level Two Corrective Action requirements in 2019 for copper. Under Condition S8.C of the Permits, these Level Two Corrective Action must be completed no later than August 31, 2020. Union Pacific failed to summarize any planned Level Two Corrective Actions in its 2019 Annual Report, a violation of the Permit, and its failure to fully implement the required Level Two Corrective Actions by August 31, 2020, will constitute additional Permit violations subject to this notice of intent to sue.

## **V. EFFLUENT LIMITATION VIOLATIONS.**

Condition S6.C of the Permits requires Permittees discharging to a “303(d)-listed” waterbody (Water Quality Category 5), either directly or indirectly through a stormwater drainage system, to comply with the applicable sampling requirements and numeric effluent limits in Table 6 of the Permits. The “applicable sampling requirements and numeric effluent limits” means the sampling and effluent limits in Table 6 that correspond to the specific parameter(s) for which the receiving water is 303(d)-listed at the time of permit coverage, or Total Suspended Solids (TSS) if the waterbody is 303(d)-listed for sediment quality at the time of permit coverage.

Union Pacific discharges to the Duwamish River, which is 303(d)-listed for sediment quality. Union Pacific’s discharges are thus subject to a maximum daily effluent limitation of 30 mg/L for TSS. Union Pacific discharges stormwater that contains elevated levels of TSS in excess of the corresponding numeric effluent limitation, as indicated in the table of effluent limitation violations below. Union Pacific also discharges stormwater with TSS levels in excess of the numeric effluent limitation from un-monitored points of discharge, as indicated by Ecology’s observations of highly turbid runoff from the site that went un-monitored and the activities and lack of BMPs in the drainage basins where Union Pacific does not monitor discharges. Each and every one of these discharges is a separate violation of the Permits. These numeric effluent limitation violations also occurred each and every day over the past five years on which there is at least 0.1 inch of precipitation in a 24-hour period and are reasonably likely to recur. Precipitation data from that time period is appended to this notice of intent to sue and identifies these days.

**Table 2 – Numeric Effluent Limitation Violations**

Quarter in which sample collected (outfall number)	Total Suspended Solids (TSS) concentration (limitation: 30 mg/L)
2Q 2019 (004)	<b>95 mg/L</b>
2Q 2019 (005)	<b>49 mg/L</b>
2Q 2019 (006)	<b>55 mg/L</b>

## **VI. VIOLATIONS OF THE ANNUAL REPORT REQUIREMENTS.**

Condition S9.B of the 2015 Permit and S9.C of the 2020 Permit require Union Pacific to submit an accurate and complete annual report to Ecology no later than May 15 of each year. The annual report must include corrective action documentation as required in Condition S8.B – D of the Permits. If a corrective action is not yet completed at the time of submission of the annual report, Union Pacific must describe the status of any outstanding corrective action. Specific information to be included in the annual report includes: identification of the conditions triggering the need for corrective action; description of the problem and identification of dates discovered; summary of any Level 1, 2, or 3 corrective actions completed during the previous calendar year and the dates corrective actions completed; and description of the status of any Level 2 or 3 corrective actions triggered during the previous calendar year, including identification of the dates Union Pacific expects to complete corrective actions.

Union Pacific has violated this condition. The annual report submitted by Union Pacific for 2019 (in May 2020) does not include the required information. Specifically, the report does not describe all of the stormwater problems identified, such as those discussed in February and March 2019 inspection reports by Ecology, does not address the 3<sup>rd</sup> quarter 2019 copper benchmark exceedance, and does not include a description of additional operational and structural source control BMPs Union Pacific implemented or plans to implement as part of its Level 1 and 2 corrective actions.

## **VII. VIOLATIONS OF THE RECORDKEEPING REQUIREMENTS.**

### **A. Failure to Record Information.**

Condition S4.B.3 of the Permits requires Union Pacific record and retain specified information for each stormwater sample taken, including the sample date and time, a notation describing if Union Pacific collected the sample within the first 12 hours of a stormwater discharge event, an explanation of why Union Pacific could not collect a sample within the first 12 hours of a stormwater discharge event, the sample location, the method of sampling and preservation, and the individual performing the sampling. Union Pacific is in violation of these conditions as it has not recorded each of these specified items for each sample taken during the last five years.

### **B. Failure to Retain Records.**

Condition S9.C of the 2015 Permit and S9.D of the 2020 Permit require Union Pacific to retain for a minimum of five years a copy of the current Permit, a copy of Union Pacific's coverage letter, records of all sampling information, inspection reports including required documentation, any other documentation of compliance with permit requirements, all equipment calibration records, all BMP maintenance records, all original recordings for continuous sampling instrumentation, copies of all laboratory results, copies of all required reports, and records of all data used to complete the application for the Permit. Union Pacific

is in violation of these conditions because it has failed to retain records of such information, reports, and other documentation during the last five years.

### **VIII. FAILURE TO REPORT PERMIT VIOLATIONS.**

Condition S9.E of the 2015 Permit and S9.F of the 2020 Permit require Union Pacific to take certain actions in the event Union Pacific is unable to comply with any of the terms and conditions of the Permits which may endanger human health or the environment or exceed any numeric effluent limitation in the permit. In such circumstances, Union Pacific must immediately take action to minimize potential pollution or otherwise stop the noncompliance and correct the problem, and Union Pacific must immediately notify the appropriate Ecology regional office of the failure to comply. Union Pacific must then submit a detailed written report to Ecology, including specified details, within 5 days of the time Union Pacific became aware of the circumstances unless Ecology requests an earlier submission.

Union Pacific routinely violates these requirements, including each and every time Union Pacific exceeded the numeric effluent limitation, as specified in Table 2, above, each and every time Union Pacific failed to comply with the corrective action requirements described in section IV of this notice of intent to sue, and each and every time Union Pacific discharged stormwater with concentrations of pollutants in excess of the Permit benchmarks, as described in Table 1 above. All these violations may endanger human health or the environment.

### **IX. REQUEST FOR SWPPP.**

Pursuant to Condition S9.G of the 2020 Permit, Puget Soundkeeper Alliance hereby requests that Union Pacific Railroad Company provide a copy of, or access to, its SWPPP complete with all incorporated plans, monitoring reports, checklists, and training and inspection logs. The copy of the SWPPP and any other communications about this request should be directed to the undersigned at the letterhead address.

Should Union Pacific fail to provide the requested complete copy of, or access to, its SWPPP as required by Condition S9.G of the 2020 Permit, it will be in violation of that condition, which violation shall also be subject to this notice of intent to sue and any ensuing lawsuit.

### **X. CONCLUSION.**

The above-described violations reflect those indicated by the information currently available to Soundkeeper. These violations are ongoing. Soundkeeper intends to sue for all violations, including those yet to be uncovered and those committed after the date of this Notice of Intent to Sue.

Under Section 309(d) of the CWA, 33 U.S.C. § 1319(d), each of the above-described violations subjects the violator to a penalty of up to \$37,500 per day for each violation that

occurred through November 2, 2015, and \$55,800 per day for each violation that occurred thereafter. In addition to civil penalties, Soundkeeper will seek injunctive relief to prevent further violations under Sections 505(a) and (d) of the CWA, 33 U.S.C. § 1365(a) and (d), and such other relief as is permitted by law. Also, Section 505(d) of the CWA, 33 U.S.C. § 1365(d), permits prevailing parties to recover costs, including attorney's fees.

Puget Soundkeeper Alliance believes that this NOTICE OF INTENT TO SUE sufficiently states grounds for filing suit. We intend, at the close of the 60-day notice period, or shortly thereafter, to file a citizen suit against Union Pacific Railroad Company under Section 505(a) of the Clean Water Act for violations.

During the 60-day notice period, we would be willing to discuss effective remedies for the violations addressed in this letter and settlement terms. If you wish to pursue such discussions in the absence of litigation, we suggest that you initiate those discussions within 10 days of receiving this notice so a meeting can be arranged and negotiations may be completed promptly. We do not intend to delay the filing of a complaint if discussions are continuing when the notice period ends.

Very truly yours,

**SMITH & LONEY, PLLC**

s/Marc Zemel

cc: Andrew Wheeling, Administrator, U.S. EPA  
Chris Hladick, Region 10 Administrator, U.S. EPA  
Laura Watson, Director, Washington Department of Ecology  
CT Corporation System, Registered Agent (711 Capitol Way S, Suite 204, Olympia, WA 98501)

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2015	07	01				0.00		0.0						
2015	07	02				0.00		0.0						
2015	07	03				0.00		0.0						
2015	07	04				0.00		0.0						
2015	07	05				0.00		0.0						
2015	07	06				0.00		0.0						
2015	07	07				0.00		0.0						
2015	07	08				0.00		0.0						
2015	07	09				0.00		0.0						
2015	07	10				0.00		0.0						
2015	07	11				0.00		0.0						
2015	07	12				T								
2015	07	13				0.00		0.0						
2015	07	14				0.00		0.0						
2015	07	15				0.00		0.0						
2015	07	16				0.00		0.0						
2015	07	17				0.00		0.0						
2015	07	18				0.00		0.0						
2015	07	19				0.00		0.0						
2015	07	20				0.00		0.0						
2015	07	21				0.16								
2015	07	22				0.00		0.0						
2015	07	23				0.00		0.0						
2015	07	24				0.00		0.0						
2015	07	25				0.03								
2015	07	26				T								
2015	07	27				0.05s								
2015	07	28												
2015	07	29												
2015	07	30												
2015	07	31												
Summary						0.24		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs. Time	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	F a l l i n g	Snow, Ice Pellets, Hail (in)			F a l l i n g	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2015	08	01														
2015	08	02				0.00s										
2015	08	03				0.00										
2015	08	04				0.00										
2015	08	05				0.00										
2015	08	06				0.00										
2015	08	07				0.00										
2015	08	08				0.00										
2015	08	09				0.00										
2015	08	10				T										
2015	08	11				0.00										
2015	08	12				0.00										
2015	08	13				T										
2015	08	14				0.01										
2015	08	15				1.36										
2015	08	16				0.00										
2015	08	17				0.00										
2015	08	18				0.00										
2015	08	19				0.00										
2015	08	20				T										
2015	08	21				0.00										
2015	08	22				0.00										
2015	08	23				0.00										
2015	08	24				0.00										
2015	08	25				0.00										
2015	08	26				0.00										
2015	08	27				0.00										
2015	08	28				0.02										
2015	08	29				0.50										
2015	08	30				2.00										
2015	08	31				0.11										
Summary						4.00		0.0								

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2015	09	01				0.10								
2015	09	02				0.19								
2015	09	03				T								
2015	09	04				0.00								
2015	09	05				0.00								
2015	09	06				0.14								
2015	09	07				T								
2015	09	08				0.00								
2015	09	09				0.00								
2015	09	10				0.00								
2015	09	11				0.00								
2015	09	12				0.00								
2015	09	13				T								
2015	09	14				0.04								
2015	09	15				0.00								
2015	09	16				0.00								
2015	09	17				0.01								
2015	09	18				0.43								
2015	09	19												
2015	09	20												
2015	09	21				0.02								
2015	09	22				0.00								
2015	09	23				0.00								
2015	09	24				0.00								
2015	09	25				T								
2015	09	26				0.00								
2015	09	27				0.00								
2015	09	28				0.00								
2015	09	29				0.00								
2015	09	30				0.00								
Summary						0.93								

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used."

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2015	10	01				0.00		0.0						
2015	10	02				0.00		0.0						
2015	10	03				T								
2015	10	04				0.00		0.0						
2015	10	05				0.00		0.0						
2015	10	06				0.00		0.0						
2015	10	07				0.03								
2015	10	08				0.34								
2015	10	09				T								
2015	10	10				0.29								
2015	10	11				0.87								
2015	10	12				0.01								
2015	10	13				0.49								
2015	10	14				0.01								
2015	10	15												
2015	10	16												
2015	10	17												
2015	10	18												
2015	10	19												
2015	10	20				0.18								
2015	10	21				0.00		0.0						
2015	10	22				T								
2015	10	23				0.00		0.0						
2015	10	24				0.00		0.0						
2015	10	25				T								
2015	10	26				0.46								
2015	10	27				0.06								
2015	10	28				T								
2015	10	29				0.10								
2015	10	30				0.26								
2015	10	31				0.80								
Summary						3.90		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2015	11	01				1.09								
2015	11	02				0.36								
2015	11	03				0.06								
2015	11	04				0.01								
2015	11	05				0.01								
2015	11	06				T								
2015	11	07				0.01								
2015	11	08				0.55								
2015	11	09				0.35								
2015	11	10				0.24								
2015	11	11				0.16								
2015	11	12				0.00	0.0							
2015	11	13				1.16								
2015	11	14				2.23								
2015	11	15				1.66								
2015	11	16				T								
2015	11	17				0.38								
2015	11	18				0.73								
2015	11	19				0.14								
2015	11	20				0.00	0.0							
2015	11	21				0.00	0.0							
2015	11	22				0.00	0.0							
2015	11	23				0.00	0.0							
2015	11	24				0.42								
2015	11	25				0.02								
2015	11	26				0.00	0.0							
2015	11	27												
2015	11	28												
2015	11	29				0.00								
2015	11	30				0.00	0.0							
			Summary			9.58								

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2015	12	01			At Observation	0.02								
2015	12	02				0.40								
2015	12	03				0.30								
2015	12	04				0.33								
2015	12	05				T								
2015	12	06				1.10								
2015	12	07				0.19								
2015	12	08				1.92								
2015	12	09				2.46								
2015	12	10				0.30								
2015	12	11				0.55								
2015	12	12												
2015	12	13												
2015	12	14												
2015	12	15				0.74								
2015	12	16				0.15								
2015	12	17				0.05								
2015	12	18				1.45								
2015	12	19				0.20								
2015	12	20				0.20								
2015	12	21				0.19			0.0					
2015	12	22				0.64								
2015	12	23				0.18								
2015	12	24				0.28								
2015	12	25				0.13								
2015	12	26				0.01								
2015	12	27				0.00			0.0					
2015	12	28				0.35								
2015	12	29				0.01								
2015	12	30				0.00			0.0					
2015	12	31				0.00			0.0					
			Summary			12.15			0.0					

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time			At Obs. Time	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.			Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)			Fall	Ground Cover (see *)	Max.	Ground Cover (see *)	Min.	Max.
2016	01	01				0.00			0.0								
2016	01	02				0.00			0.0								
2016	01	03				0.00			0.0								
2016	01	04				0.02											
2016	01	05				0.03											
2016	01	06				0.10											
2016	01	07				0.00		0.0									
2016	01	08				0.00		0.0									
2016	01	09				0.00		0.0									
2016	01	10				0.00		0.0									
2016	01	11				T											
2016	01	12				0.15											
2016	01	13				0.35											
2016	01	14				0.55											
2016	01	15				0.01											
2016	01	16				0.39											
2016	01	17				0.17											
2016	01	18				0.20											
2016	01	19				0.04											
2016	01	20				0.44											
2016	01	21				0.66											
2016	01	22				0.92											
2016	01	23				0.17											
2016	01	24				0.47											
2016	01	25				0.00		0.0									
2016	01	26				0.04											
2016	01	27				0.34											
2016	01	28				1.57											
2016	01	29				0.05											
2016	01	30				0.11											
2016	01	31				0.00		0.0									
Summary						6.78		0.0									

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2016	02	01			At Observation	0.28								
2016	02	02				0.02								
2016	02	03				0.02								
2016	02	04				0.55								
2016	02	05				0.01								
2016	02	06				0.20								
2016	02	07				0.00								
2016	02	08				0.00	0.0							
2016	02	09				0.00	0.0							
2016	02	10				0.00								
2016	02	11				0.18								
2016	02	12				1.18								
2016	02	13				0.73								
2016	02	14				0.35								
2016	02	15				0.12								
2016	02	16				0.43								
2016	02	17				T								
2016	02	18												
2016	02	19				0.27								
2016	02	20				0.43								
2016	02	21				0.00								
2016	02	22				0.11								
2016	02	23				0.00	0.0							
2016	02	24				0.00	0.0							
2016	02	25				0.01								
2016	02	26				0.00	0.0							
2016	02	27				0.24								
2016	02	28				0.07								
2016	02	29				1.07								
Summary						6.27								

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2016	03	01				0.28								
2016	03	02				0.68								
2016	03	03				0.19								
2016	03	04				0.02								
2016	03	05				0.41								
2016	03	06				0.06								
2016	03	07				0.81								
2016	03	08				0.09								
2016	03	09				0.14								
2016	03	10				0.95								
2016	03	11				0.38								
2016	03	12				0.60								
2016	03	13				0.17								
2016	03	14				0.30								
2016	03	15				0.07								
2016	03	16				0.00	0.0							
2016	03	17				0.00	0.0							
2016	03	18				0.00								
2016	03	19				0.00	0.0							
2016	03	20				T								
2016	03	21				0.13								
2016	03	22				0.24								
2016	03	23				0.02								
2016	03	24				0.15								
2016	03	25				T								
2016	03	26				0.00	0.0							
2016	03	27				0.16								
2016	03	28				0.32								
2016	03	29				0.00								
2016	03	30				0.00	0.0							
2016	03	31				0.00	0.0							
			Summary			6.17	0.0							

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2016	04	01				0.00											
2016	04	02				0.00		0.0									
2016	04	03				0.00											
2016	04	04				0.46											
2016	04	05				0.00		0.0									
2016	04	06				0.00		0.0									
2016	04	07				0.00		0.0									
2016	04	08				0.00		0.0									
2016	04	09				0.00		0.0									
2016	04	10				0.00		0.0									
2016	04	11				0.00		0.0									
2016	04	12				T											
2016	04	13				0.69											
2016	04	14				0.20											
2016	04	15				0.02											
2016	04	16				0.00		0.0									
2016	04	17				0.00		0.0									
2016	04	18				0.00											
2016	04	19				0.00											
2016	04	20				0.00											
2016	04	21				0.00		0.0									
2016	04	22															
2016	04	23				0.03											
2016	04	24				0.01											
2016	04	25				0.27											
2016	04	26				0.02											
2016	04	27				T											
2016	04	28				0.00		0.0									
2016	04	29				T											
2016	04	30				0.01											
Summary						1.71		0.0									

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.	Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2016	05	01			0.00												
2016	05	02			0.00												
2016	05	03			0.00		0.0										
2016	05	04			0.00												
2016	05	05			0.00												
2016	05	06			0.00												
2016	05	07			0.00												
2016	05	08			0.05												
2016	05	09			0.02												
2016	05	10			0.00		0.0										
2016	05	11			0.00												
2016	05	12			0.00												
2016	05	13			0.00		0.0										
2016	05	14			0.00		0.0										
2016	05	15			T												
2016	05	16			0.08												
2016	05	17			T												
2016	05	18			0.00												
2016	05	19			0.35												
2016	05	20			0.40												
2016	05	21			0.04												
2016	05	22			0.17												
2016	05	23			T												
2016	05	24			0.00		0.0										
2016	05	25			0.00												
2016	05	26			0.00		0.0										
2016	05	27			0.00		0.0										
2016	05	28			0.11												
2016	05	29			0.03												
2016	05	30			0.03												
2016	05	31			0.00		0.0										
Summary					1.28		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2016	06	01				0.00								
2016	06	02				0.04								
2016	06	03				0.00		0.0						
2016	06	04				0.00								
2016	06	05				0.00								
2016	06	06				0.00								
2016	06	07				0.00								
2016	06	08				0.00								
2016	06	09				T								
2016	06	10				0.04								
2016	06	11				0.02								
2016	06	12				0.09								
2016	06	13				0.00								
2016	06	14				0.01								
2016	06	15				0.03								
2016	06	16				0.00		0.0						
2016	06	17				0.00		0.0						
2016	06	18				0.38								
2016	06	19				0.01								
2016	06	20				0.00		0.0						
2016	06	21				1.13								
2016	06	22				0.00		0.0						
2016	06	23				0.07								
2016	06	24				0.39								
2016	06	25				0.03								
2016	06	26				0.00		0.0						
2016	06	27				0.00		0.0						
2016	06	28				0.00		0.0						
2016	06	29				0.00		0.0						
2016	06	30				0.00		0.0						
Summary						2.24		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used."

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2016	07	01			At Observation	0.00								
2016	07	02				0.00		0.0						
2016	07	03				0.00								
2016	07	04				T								
2016	07	05				0.02								
2016	07	06				0.00		0.0						
2016	07	07				0.00		0.0						
2016	07	08				0.16								
2016	07	09				0.11								
2016	07	10				0.01								
2016	07	11				0.00		0.0						
2016	07	12				0.00		0.0						
2016	07	13				0.00								
2016	07	14				0.00		0.0						
2016	07	15				0.00		0.0						
2016	07	16				0.00		0.0						
2016	07	17				0.00		0.0						
2016	07	18				0.01								
2016	07	19				0.00		0.0						
2016	07	20				0.00								
2016	07	21				0.00		0.0						
2016	07	22				0.25								
2016	07	23				0.03								
2016	07	24				0.00		0.0						
2016	07	25				0.00		0.0						
2016	07	26				0.00		0.0						
2016	07	27				0.00		0.0						
2016	07	28				0.00		0.0						
2016	07	29				0.00								
2016	07	30				0.00		0.0						
2016	07	31				0.00								
		Summary				0.59		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2016	08	01				0.00								
2016	08	02												
2016	08	03												
2016	08	04												
2016	08	05												
2016	08	06												
2016	08	07				0.00								
2016	08	08				0.06								
2016	08	09				0.00								
2016	08	10				0.00								
2016	08	11				0.00								
2016	08	12				0.00								
2016	08	13				0.00								
2016	08	14				0.00								
2016	08	15				0.00								
2016	08	16				0.00								
2016	08	17				0.00								
2016	08	18				0.00								
2016	08	19				0.00								
2016	08	20				0.00								
2016	08	21				0.00								
2016	08	22				0.00								
2016	08	23												
2016	08	24				0.00								
2016	08	25				0.00								
2016	08	26				0.00								
2016	08	27				0.00								
2016	08	28				0.00								
2016	08	29				T								
2016	08	30				0.00								
2016	08	31				T								
Summary						0.06								

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.	Rain, Melted Snow, Etc. (in)	F l a g	Snow, Ice Pellets, Hail (in)	F l a g				Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2016	09	01					0.01										
2016	09	02					0.07										
2016	09	03					0.21										
2016	09	04					0.19										
2016	09	05					0.00										
2016	09	06					0.20										
2016	09	07					0.01										
2016	09	08					0.07										
2016	09	09					0.00										
2016	09	10					0.00										
2016	09	11					0.00										
2016	09	12					0.00										
2016	09	13					0.00										
2016	09	14					0.00										
2016	09	15					0.00										
2016	09	16					0.00										
2016	09	17					0.12										
2016	09	18					0.24										
2016	09	19					0.01										
2016	09	20					0.01										
2016	09	21					0.00										
2016	09	22					0.00										
2016	09	23					T										
2016	09	24					T										
2016	09	25					0.00										
2016	09	26					0.00										
2016	09	27					0.00										
2016	09	28					0.00										
2016	09	29					0.00										
2016	09	30					0.00										
Summary					1.14		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used."

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2016	10	01				0.05											
2016	10	02				0.06											
2016	10	03				0.00		0.0									
2016	10	04				0.08											
2016	10	05				0.06											
2016	10	06				0.01											
2016	10	07				0.46											
2016	10	08				0.12											
2016	10	09				0.89											
2016	10	10				0.17											
2016	10	11				0.00		0.0									
2016	10	12				0.00		0.0									
2016	10	13				0.52											
2016	10	14				2.07											
2016	10	15				1.41											
2016	10	16				0.69											
2016	10	17				0.33											
2016	10	18				0.19											
2016	10	19				0.01											
2016	10	20				1.18											
2016	10	21				0.49											
2016	10	22				0.01											
2016	10	23				0.17											
2016	10	24				0.01											
2016	10	25				0.15											
2016	10	26				0.28											
2016	10	27				1.54											
2016	10	28				0.07											
2016	10	29				0.08											
2016	10	30				0.09											
2016	10	31				0.36											
Summary						11.55		0.0									

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time			At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)				Fall	Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2016	11	01				1.10												
2016	11	02				0.14												
2016	11	03				0.44												
2016	11	04				0.00	0.0											
2016	11	05				0.20												
2016	11	06				1.43												
2016	11	07				0.05												
2016	11	08				0.01												
2016	11	09				0.05												
2016	11	10				0.17												
2016	11	11				0.00	0.0											
2016	11	12				0.10												
2016	11	13				0.06												
2016	11	14				0.39												
2016	11	15				0.98												
2016	11	16				0.33												
2016	11	17				0.01												
2016	11	18				0.00	0.0											
2016	11	19				0.06												
2016	11	20				0.09												
2016	11	21				0.08												
2016	11	22				0.01												
2016	11	23				0.62												
2016	11	24				0.50												
2016	11	25																
2016	11	26																
2016	11	27				1.64												
2016	11	28				0.47												
2016	11	29				0.01												
2016	11	30				0.20												
Summary						9.14	0.0											

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2016	12	01				0.05								
2016	12	02				0.06								
2016	12	03				0.23								
2016	12	04				0.23								
2016	12	05				0.08								
2016	12	06				0.22								
2016	12	07				0.00	0.0							
2016	12	08				0.00	0.0							
2016	12	09												
2016	12	10				0.23								
2016	12	11												
2016	12	12				0.31								
2016	12	13				0.03								
2016	12	14				0.00	0.0							
2016	12	15				0.00	0.0							
2016	12	16				0.00	0.0							
2016	12	17				0.00	0.0							
2016	12	18				0.00	0.0							
2016	12	19				0.46								
2016	12	20				0.30								
2016	12	21				0.00	0.0							
2016	12	22				0.00	0.0							
2016	12	23				0.72								
2016	12	24				0.32								
2016	12	25				0.01								
2016	12	26				0.00	0.0							
2016	12	27				0.55								
2016	12	28				0.01								
2016	12	29				0.00	0.0							
2016	12	30				0.25								
2016	12	31				0.01								
			Summary			4.07	0.0							

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time			At Obs. Time	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.			Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)			Falling	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2017	01	01				0.20		0.7									
2017	01	02				0.00		0.0									
2017	01	03				0.00											
2017	01	04															
2017	01	05				0.00											
2017	01	06				0.00		0.0									
2017	01	07				0.00		0.0									
2017	01	08				T											
2017	01	09				0.61											
2017	01	10				0.19											
2017	01	11				0.03											
2017	01	12				0.00		0.0									
2017	01	13				0.00		0.0									
2017	01	14				0.00		0.0									
2017	01	15				0.00		0.0									
2017	01	16				0.00		0.0									
2017	01	17				0.05											
2017	01	18				2.39											
2017	01	19				0.59											
2017	01	20				0.16											
2017	01	21				0.01											
2017	01	22				0.04											
2017	01	23				0.11											
2017	01	24				0.00		0.0									
2017	01	25				T											
2017	01	26				0.02											
2017	01	27				0.00											
2017	01	28				0.00		0.0									
2017	01	29				0.00		0.0									
2017	01	30				T											
2017	01	31				0.01											
Summary						4.41		0.7									

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2017	02	01				0.00								
2017	02	02				0.00								
2017	02	03				0.12								
2017	02	04				0.85								
2017	02	05				0.71								
2017	02	06				1.23		4.8						
2017	02	07				0.17								
2017	02	08				0.02								
2017	02	09				2.02								
2017	02	10				0.82								
2017	02	11				0.03								
2017	02	12				0.02								
2017	02	13				0.00		0.0						
2017	02	14				0.00		0.0						
2017	02	15				1.09								
2017	02	16				1.75								
2017	02	17				0.03								
2017	02	18				0.02								
2017	02	19				0.18								
2017	02	20				0.11								
2017	02	21				0.25								
2017	02	22				0.29								
2017	02	23				0.01								
2017	02	24				0.08								
2017	02	25				0.01								
2017	02	26				0.23								
2017	02	27				0.37		0.3						
2017	02	28				0.20								
Summary						10.61		5.1						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall				Ground Cover (see *)	Max.	Ground Cover (see *)	Min.	Ground Cover (see *)	Max.
2017	03	01			T													
2017	03	02			0.02													
2017	03	03			0.10													
2017	03	04			0.82													
2017	03	05			0.14													
2017	03	06			0.01													
2017	03	07			0.09													
2017	03	08			0.44													
2017	03	09			0.15													
2017	03	10			0.52													
2017	03	11			0.02													
2017	03	12			0.33													
2017	03	13			0.14													
2017	03	14			0.76													
2017	03	15			0.54													
2017	03	16			0.34													
2017	03	17			0.00	0.0												
2017	03	18			0.98													
2017	03	19			0.66													
2017	03	20			0.00	0.0												
2017	03	21			0.15													
2017	03	22			0.05													
2017	03	23			0.03													
2017	03	24			0.33													
2017	03	25			0.43													
2017	03	26			0.01													
2017	03	27			0.35													
2017	03	28			0.09													
2017	03	29			0.35													
2017	03	30			0.13													
2017	03	31			0.02													
		Summary			8.00	0.0												

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.	Rain, Melted Snow, Etc. (in)	F l a g	Snow, Ice Pellets, Hail (in)	F l a g			At Obs. Time	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2017	04	01					0.03										
2017	04	02					0.08										
2017	04	03					0.02										
2017	04	04					0.00	0.0									
2017	04	05					0.34										
2017	04	06					0.60										
2017	04	07					0.24										
2017	04	08					0.18										
2017	04	09					0.06										
2017	04	10					0.37										
2017	04	11					0.09										
2017	04	12					0.63										
2017	04	13					0.39										
2017	04	14					0.08										
2017	04	15					0.01										
2017	04	16					0.00	0.0									
2017	04	17					0.00	0.0									
2017	04	18					0.19										
2017	04	19					0.09										
2017	04	20					0.41										
2017	04	21					0.00	0.0									
2017	04	22					0.00	0.0									
2017	04	23					0.12										
2017	04	24					0.34										
2017	04	25					0.01										
2017	04	26					0.04										
2017	04	27					0.06										
2017	04	28					0.05										
2017	04	29					0.00	0.0									
2017	04	30					0.09										
Summary							4.52	0.0									

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation Time	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2017	05	01				0.07								
2017	05	02				0.07								
2017	05	03				0.34								
2017	05	04				0.02								
2017	05	05				0.70								
2017	05	06				0.48								
2017	05	07				0.01								
2017	05	08				0.00		0.0						
2017	05	09				0.00		0.0						
2017	05	10				0.00		0.0						
2017	05	11				0.12								
2017	05	12				0.30								
2017	05	13				0.16								
2017	05	14				0.02								
2017	05	15				T								
2017	05	16				0.47								
2017	05	17				0.05								
2017	05	18				0.01								
2017	05	19				0.00		0.0						
2017	05	20				0.00		0.0						
2017	05	21				0.00		0.0						
2017	05	22				0.00		0.0						
2017	05	23				0.00		0.0						
2017	05	24				0.00								
2017	05	25				0.00		0.0						
2017	05	26				0.00								
2017	05	27				0.00		0.0						
2017	05	28												
2017	05	29				0.00		0.0						
2017	05	30				0.00		0.0						
2017	05	31				T								
Summary						2.82		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

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"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		At Observation Time	Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall				Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2017	06	01				0.05												
2017	06	02				T												
2017	06	03				0.00												
2017	06	04				0.00												
2017	06	05				0.00												
2017	06	06				0.00												
2017	06	07				0.00												
2017	06	08				0.24												
2017	06	09				0.10												
2017	06	10				0.02												
2017	06	11				0.00												
2017	06	12				0.00												
2017	06	13				T												
2017	06	14				0.00												
2017	06	15				0.03												
2017	06	16				1.40												
2017	06	17				0.01												
2017	06	18				0.02												
2017	06	19				T												
2017	06	20				T												
2017	06	21				T												
2017	06	22				0.00												
2017	06	23																
2017	06	24				0.00												
2017	06	25				0.00												
2017	06	26				0.00												
2017	06	27				0.00												
2017	06	28				0.00												
2017	06	29				0.00												
2017	06	30				0.00												
Summary						1.87												

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used."

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)			Fall	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2017	07	01				0.00		0.0								
2017	07	02				0.00		0.0								
2017	07	03				0.00		0.0								
2017	07	04				0.00		0.0								
2017	07	05				0.00										
2017	07	06				0.00		0.0								
2017	07	07				0.00		0.0								
2017	07	08				0.00		0.0								
2017	07	09				0.00		0.0								
2017	07	10				0.00		0.0								
2017	07	11				0.00		0.0								
2017	07	12														
2017	07	13				0.00		0.0								
2017	07	14				0.00		0.0								
2017	07	15				0.00		0.0								
2017	07	16				0.00		0.0								
2017	07	17				0.00		0.0								
2017	07	18				0.00		0.0								
2017	07	19				0.00		0.0								
2017	07	20				0.00		0.0								
2017	07	21				0.00		0.0								
2017	07	22				0.00										
2017	07	23														
2017	07	24														
2017	07	25														
2017	07	26				0.00										
2017	07	27				T										
2017	07	28				0.00		0.0								
2017	07	29				0.00		0.0								
2017	07	30				0.00		0.0								
2017	07	31				0.00		0.0								
Summary						0.00		0.0								

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		24 Hour Amounts Ending at Observation Time				At Obs. Time		4 in. Depth		8 in. Depth				
			Max.	Min.	Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall	At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2017	08	01															
2017	08	02															
2017	08	03															
2017	08	04															
2017	08	05				0.00											
2017	08	06				0.00											
2017	08	07				0.00	0.0										
2017	08	08				0.00											
2017	08	09															
2017	08	10															
2017	08	11				0.00											
2017	08	12				0.00	0.0										
2017	08	13				0.02											
2017	08	14				0.00	0.0										
2017	08	15				0.00	0.0										
2017	08	16				0.00	0.0										
2017	08	17				0.00	0.0										
2017	08	18				0.00	0.0										
2017	08	19				0.00	0.0										
2017	08	20				0.00	0.0										
2017	08	21				0.00	0.0										
2017	08	22				0.00	0.0										
2017	08	23				0.00											
2017	08	24				0.00	0.0										
2017	08	25				0.00	0.0										
2017	08	26				0.00	0.0										
2017	08	27															
2017	08	28				0.00											
2017	08	29				0.00	0.0										
2017	08	30				0.00											
2017	08	31				0.03											
Summary						0.05	0.0										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.	Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2017	09	01					0.02										
2017	09	02					0.00										
2017	09	03					0.00										
2017	09	04					0.00										
2017	09	05					0.00										
2017	09	06					0.00										
2017	09	07					0.00										
2017	09	08					0.00										
2017	09	09					0.00										
2017	09	10					T										
2017	09	11					0.00										
2017	09	12					0.00										
2017	09	13					0.00										
2017	09	14					0.00										
2017	09	15					0.00										
2017	09	16															
2017	09	17					0.00										
2017	09	18					0.08										
2017	09	19					0.51										
2017	09	20					0.51										
2017	09	21					0.02										
2017	09	22					0.00										
2017	09	23					0.00										
2017	09	24					0.00										
2017	09	25					0.02										
2017	09	26					T										
2017	09	27					0.00										
2017	09	28					0.00										
2017	09	29					0.00										
2017	09	30					0.04										
Summary							1.20										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2017	10	01				0.02								
2017	10	02				0.00		0.0						
2017	10	03				0.00		0.0						
2017	10	04				0.00		0.0						
2017	10	05				0.00		0.0						
2017	10	06				0.00		0.0						
2017	10	07												
2017	10	08				0.07								
2017	10	09				0.00		0.0						
2017	10	10				0.00		0.0						
2017	10	11				0.02								
2017	10	12				T								
2017	10	13				0.19								
2017	10	14				0.00		0.0						
2017	10	15				0.00		0.0						
2017	10	16				0.00		0.0						
2017	10	17				0.02								
2017	10	18				0.03								
2017	10	19				1.40								
2017	10	20				0.49								
2017	10	21				0.34								
2017	10	22				0.87								
2017	10	23				0.01								
2017	10	24				0.00		0.0						
2017	10	25				0.00								
2017	10	26				0.01								
2017	10	27				0.00		0.0						
2017	10	28				0.00		0.0						
2017	10	29				0.00		0.0						
2017	10	30				0.00		0.0						
2017	10	31				0.00		0.0						
Summary						3.47		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

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"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2017	11	01				0.00		0.0						
2017	11	02				0.00		0.0						
2017	11	03				0.60		0.1						
2017	11	04				0.21								
2017	11	05				0.86								
2017	11	06				0.20								
2017	11	07				0.00	0.0							
2017	11	08				0.00	0.0							
2017	11	09				0.19								
2017	11	10				0.25								
2017	11	11				0.02								
2017	11	12				0.54								
2017	11	13				0.35								
2017	11	14				0.64								
2017	11	15				0.58								
2017	11	16				0.08								
2017	11	17				0.06								
2017	11	18				0.01								
2017	11	19				0.00	0.0							
2017	11	20				0.93								
2017	11	21				0.29								
2017	11	22				1.20								
2017	11	23				0.54								
2017	11	24												
2017	11	25												
2017	11	26				0.44								
2017	11	27				0.11								
2017	11	28				0.08								
2017	11	29				0.53								
2017	11	30				0.14								
Summary						8.85		0.1						

Empty, or blank, cells indicate that a data observation was not reported.

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"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2017	12	01				0.14											
2017	12	02				0.23											
2017	12	03				0.66											
2017	12	04				0.01											
2017	12	05				0.00		0.0									
2017	12	06				0.00		0.0									
2017	12	07				0.00		0.0									
2017	12	08				0.00		0.0									
2017	12	09				0.00		0.0									
2017	12	10				0.00		0.0									
2017	12	11				0.00		0.0									
2017	12	12				0.00		0.0									
2017	12	13				0.00		0.0									
2017	12	14				0.00		0.0									
2017	12	15				0.01											
2017	12	16				0.02											
2017	12	17				0.09											
2017	12	18				0.14											
2017	12	19				1.43											
2017	12	20				0.49											
2017	12	21				0.00		0.0									
2017	12	22				0.13											
2017	12	23				0.03											
2017	12	24				0.00		0.0									
2017	12	25				0.26		2.5									
2017	12	26				0.01											
2017	12	27				0.00											
2017	12	28				T											
2017	12	29				0.78											
2017	12	30				0.80											
2017	12	31				0.09											
Summary						5.32	2.5										

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"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

U.S. Department of Commerce  
National Oceanic & Atmospheric Administration  
National Environmental Satellite, Data, and Information Service  
Current Location: Elev: 197 ft. Lat: 47.5440° N Lon: -122.3038° W  
Station: **SEATTLE 5.8 SSE, WA US US1WAKG0200**

**Record of Climatological Observations**  
These data are quality controlled and may not be identical to the original observations.  
Generated on 07/24/2020

National Centers for Environmental Information  
151 Patton Avenue  
Asheville, North Carolina 28801

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation Time	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2018	01	01			At Observation Time	0.00								
2018	01	02				0.00								
2018	01	03				0.00								
2018	01	04				0.00								
2018	01	05				0.30								
2018	01	06				0.44								
2018	01	07				0.16								
2018	01	08				0.38								
2018	01	09				0.26								
2018	01	10				0.19								
2018	01	11				0.35								
2018	01	12				0.78								
2018	01	13				0.10								
2018	01	14				0.01								
2018	01	15				0.00	0.0							
2018	01	16				0.26								
2018	01	17				0.04								
2018	01	18				0.87								
2018	01	19				0.24								
2018	01	20				0.07								
2018	01	21				0.06								
2018	01	22				0.32								
2018	01	23				0.02								
2018	01	24				0.97								
2018	01	25				0.33								
2018	01	26				0.15								
2018	01	27				0.72								
2018	01	28				0.13								
2018	01	29				0.04								
2018	01	30				0.93								
2018	01	31				0.00	0.0							
Summary						8.12	0.0							

Empty, or blank, cells indicate that a data observation was not reported.

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Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2018	02	01				0.02								
2018	02	02				0.62								
2018	02	03				0.03								
2018	02	04				0.15								
2018	02	05				0.02								
2018	02	06				T								
2018	02	07				T								
2018	02	08				0.00	0.0							
2018	02	09				0.11								
2018	02	10				0.03								
2018	02	11				0.00	0.0							
2018	02	12				0.00	0.0							
2018	02	13				0.00	0.0							
2018	02	14				0.21								
2018	02	15				0.05								
2018	02	16				0.08								
2018	02	17				0.20								
2018	02	18				0.11								
2018	02	19				0.03								
2018	02	20				0.00	0.0							
2018	02	21				0.02								
2018	02	22				0.08	1.5							
2018	02	23				0.00	0.0							
2018	02	24				0.01								
2018	02	25				0.11								
2018	02	26				T								
2018	02	27				0.00	0.0							
2018	02	28				0.48								
Summary						2.36	1.5							

Empty, or blank, cells indicate that a data observation was not reported.

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"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Min.	Max.
2018	03	01				0.46								
2018	03	02				0.15								
2018	03	03				T								
2018	03	04				0.00								
2018	03	05				0.07								
2018	03	06				0.00								
2018	03	07				0.00								
2018	03	08				0.09								
2018	03	09				0.46								
2018	03	10				0.00								
2018	03	11												
2018	03	12				0.00								
2018	03	13				T								
2018	03	14				0.21								
2018	03	15				T								
2018	03	16				0.00								
2018	03	17				0.00								
2018	03	18				0.00								
2018	03	19				0.00								
2018	03	20				0.00								
2018	03	21				0.00								
2018	03	22				0.24								
2018	03	23				0.31								
2018	03	24				0.56								
2018	03	25												
2018	03	26				0.02								
2018	03	27				0.07								
2018	03	28				0.03								
2018	03	29				0.01								
2018	03	30				0.00								
2018	03	31				0.00								
Summary						2.68								

Empty, or blank, cells indicate that a data observation was not reported.

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Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2018	04	01				0.00		0.0						
2018	04	02				0.16								
2018	04	03				0.00		0.0						
2018	04	04				0.09								
2018	04	05				0.22								
2018	04	06				0.22								
2018	04	07				0.47								
2018	04	08				0.60								
2018	04	09				0.08								
2018	04	10				0.05								
2018	04	11				0.22								
2018	04	12				0.22								
2018	04	13				0.19								
2018	04	14				0.61								
2018	04	15				1.78								
2018	04	16				0.13								
2018	04	17				0.28								
2018	04	18				0.01								
2018	04	19				0.02								
2018	04	20				0.00		0.0						
2018	04	21				0.08								
2018	04	22				0.02								
2018	04	23				0.00		0.0						
2018	04	24				0.00		0.0						
2018	04	25				0.00								
2018	04	26				0.00		0.0						
2018	04	27				0.00		0.0						
2018	04	28				0.26								
2018	04	29				0.15								
2018	04	30				0.01								
Summary						5.87		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

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Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2018	05	01				0.01								
2018	05	02				0.00		0.0						
2018	05	03				0.00		0.0						
2018	05	04				0.00		0.0						
2018	05	05				0.00		0.0						
2018	05	06				0.03								
2018	05	07				0.00		0.0						
2018	05	08				0.00		0.0						
2018	05	09				0.04								
2018	05	10				T								
2018	05	11				0.04								
2018	05	12				0.00		0.0						
2018	05	13				0.00								
2018	05	14				0.00		0.0						
2018	05	15				0.00		0.0						
2018	05	16				0.00		0.0						
2018	05	17				0.00		0.0						
2018	05	18				0.00		0.0						
2018	05	19				T								
2018	05	20				0.02								
2018	05	21				0.00		0.0						
2018	05	22				0.00		0.0						
2018	05	23				0.00		0.0						
2018	05	24				T								
2018	05	25				0.01								
2018	05	26				0.00		0.0						
2018	05	27				0.00		0.0						
2018	05	28				0.00		0.0						
2018	05	29				0.00		0.0						
2018	05	30				0.00		0.0						
2018	05	31				0.00		0.0						
Summary						0.15		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.	Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2018	06	01			0.02												
2018	06	02			0.00												
2018	06	03			0.00		0.0										
2018	06	04			0.04												
2018	06	05			0.05												
2018	06	06			0.00												
2018	06	07			0.00		0.0										
2018	06	08			0.00												
2018	06	09			0.26												
2018	06	10			0.16												
2018	06	11			0.09												
2018	06	12			0.00			0.0									
2018	06	13			0.13												
2018	06	14			T												
2018	06	15			0.00		0.0										
2018	06	16			0.00		0.0										
2018	06	17			0.00		0.0										
2018	06	18			0.00		0.0										
2018	06	19			0.00		0.0										
2018	06	20			0.00												
2018	06	21			0.00		0.0										
2018	06	22			0.00		0.0										
2018	06	23			0.18												
2018	06	24			0.00												
2018	06	25			0.13												
2018	06	26			0.02												
2018	06	27			0.00		0.0										
2018	06	28															
2018	06	29			0.00		0.0										
2018	06	30			T												
Summary					1.08		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2018	07	01				0.02								
2018	07	02				0.00		0.0						
2018	07	03				0.00		0.0						
2018	07	04				0.00		0.0						
2018	07	05				0.00		0.0						
2018	07	06				0.00		0.0						
2018	07	07				0.00		0.0						
2018	07	08				0.00		0.0						
2018	07	09				0.00		0.0						
2018	07	10				0.01								
2018	07	11				0.00								
2018	07	12				0.00		0.0						
2018	07	13				0.00		0.0						
2018	07	14												
2018	07	15				0.00								
2018	07	16				0.00								
2018	07	17				0.00		0.0						
2018	07	18				0.00		0.0						
2018	07	19				0.00		0.0						
2018	07	20				0.00		0.0						
2018	07	21												
2018	07	22				0.00		0.0						
2018	07	23				0.00		0.0						
2018	07	24				0.00		0.0						
2018	07	25				0.00								
2018	07	26				0.00		0.0						
2018	07	27				0.00		0.0						
2018	07	28				0.00		0.0						
2018	07	29				0.00		0.0						
2018	07	30												
2018	07	31												
						0.03		0.0						
			Summary											

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2018	08	01												
2018	08	02												
2018	08	03												
2018	08	04												
2018	08	05				0.06								
2018	08	06				0.00								
2018	08	07				0.00		0.0						
2018	08	08				0.00		0.0						
2018	08	09												
2018	08	10												
2018	08	11				0.00								
2018	08	12				0.03								
2018	08	13				0.00		0.0						
2018	08	14				0.00		0.0						
2018	08	15				0.00		0.0						
2018	08	16				0.00		0.0						
2018	08	17												
2018	08	18				0.00		0.0						
2018	08	19				0.00		0.0						
2018	08	20				0.00		0.0						
2018	08	21				0.00		0.0						
2018	08	22				0.00		0.0						
2018	08	23				T								
2018	08	24				T								
2018	08	25				0.00		0.0						
2018	08	26				0.01								
2018	08	27				0.07								
2018	08	28				0.00		0.0						
2018	08	29				0.00		0.0						
2018	08	30				0.00		0.0						
2018	08	31				0.00		0.0						
Summary						0.17		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		At Obs. Time	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)			Fall	Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2018	09	01				0.00		0.0									
2018	09	02				0.00											
2018	09	03				0.00		0.0									
2018	09	04				0.00		0.0									
2018	09	05				0.00		0.0									
2018	09	06				0.00		0.0									
2018	09	07				0.00		0.0									
2018	09	08				0.08											
2018	09	09				T											
2018	09	10				0.22											
2018	09	11				T											
2018	09	12				0.04											
2018	09	13				T											
2018	09	14				0.26											
2018	09	15				0.20											
2018	09	16				0.31											
2018	09	17				0.04											
2018	09	18				0.00		0.0									
2018	09	19				0.00											
2018	09	20				0.17											
2018	09	21				0.00		0.0									
2018	09	22				0.11											
2018	09	23				0.03											
2018	09	24				0.00		0.0									
2018	09	25				0.00		0.0									
2018	09	26				0.00											
2018	09	27				0.00		0.0									
2018	09	28				0.00		0.0									
2018	09	29				0.00		0.0									
2018	09	30				0.11											
Summary						1.57		0.0									

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used."

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.	Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2018	10	01			0.02												
2018	10	02			0.36												
2018	10	03			0.04												
2018	10	04			0.00		0.0										
2018	10	05			0.00		0.0										
2018	10	06			0.40												
2018	10	07			0.00		0.0										
2018	10	08			0.11												
2018	10	09			0.37												
2018	10	10			0.01												
2018	10	11			0.00		0.0										
2018	10	12			0.00		0.0										
2018	10	13			0.00		0.0										
2018	10	14			0.00		0.0										
2018	10	15			0.00		0.0										
2018	10	16			0.00		0.0										
2018	10	17			0.00		0.0										
2018	10	18			0.00		0.0										
2018	10	19			0.00		0.0										
2018	10	20															
2018	10	21			0.00		0.0										
2018	10	22			0.00		0.0										
2018	10	23			0.00		0.0										
2018	10	24			0.04												
2018	10	25			T												
2018	10	26			0.85												
2018	10	27			0.02												
2018	10	28			1.13												
2018	10	29			0.25												
2018	10	30			0.01												
2018	10	31			0.05												
Summary					3.66		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		At Observation Time	Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2018	11	01				0.02												
2018	11	02				0.25												
2018	11	03				T												
2018	11	04				0.20												
2018	11	05				0.08												
2018	11	06				0.02												
2018	11	07				0.06												
2018	11	08				T												
2018	11	09				0.00		0.0										
2018	11	10				0.12												
2018	11	11				0.00		0.0										
2018	11	12				0.00		0.0										
2018	11	13				0.00		0.0										
2018	11	14				0.02												
2018	11	15				0.06												
2018	11	16				0.02												
2018	11	17				T												
2018	11	18				0.00		0.0										
2018	11	19				0.00												
2018	11	20				0.00		0.0										
2018	11	21				0.00		0.0										
2018	11	22				0.24												
2018	11	23																
2018	11	24																
2018	11	25				1.04												
2018	11	26				0.27												
2018	11	27				1.62												
2018	11	28				0.49												
2018	11	29				0.15												
2018	11	30				0.01												
Summary						4.67		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used."

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2018	12	01			At Observation	0.18								
2018	12	02				0.09								
2018	12	03				0.01								
2018	12	04				0.00		0.0						
2018	12	05				0.00		0.0						
2018	12	06				0.00		0.0						
2018	12	07				0.00		0.0						
2018	12	08				0.01								
2018	12	09				T								
2018	12	10				0.59								
2018	12	11				0.19								
2018	12	12				0.43								
2018	12	13				0.16								
2018	12	14				0.15								
2018	12	15				0.02								
2018	12	16				0.36								
2018	12	17				0.39								
2018	12	18				1.02								
2018	12	19				0.12								
2018	12	20				0.11								
2018	12	21				0.15								
2018	12	22				0.01								
2018	12	23				0.63								
2018	12	24				0.42								
2018	12	25				0.02								
2018	12	26				T								
2018	12	27				0.16								
2018	12	28				0.04								
2018	12	29				0.37								
2018	12	30				0.69								
2018	12	31				0.01								
Summary						6.33		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2019	01	01				0.00		0.0						
2019	01	02				0.00								
2019	01	03				0.52								
2019	01	04				0.40								
2019	01	05				0.01								
2019	01	06				0.21								
2019	01	07				0.27								
2019	01	08				0.01								
2019	01	09				0.36								
2019	01	10				0.26								
2019	01	11				0.02								
2019	01	12				0.00		0.0						
2019	01	13				0.00		0.0						
2019	01	14				0.00		0.0						
2019	01	15				0.00		0.0						
2019	01	16				0.00								
2019	01	17				0.07								
2019	01	18				0.11								
2019	01	19				0.31								
2019	01	20				0.08								
2019	01	21				T								
2019	01	22				0.00		0.0						
2019	01	23				0.69								
2019	01	24				0.14								
2019	01	25				0.01								
2019	01	26				0.00		0.0						
2019	01	27				0.00		0.0						
2019	01	28				0.00								
2019	01	29				0.00								
2019	01	30				0.00		0.0						
2019	01	31				0.00		0.0						
			Summary			3.47		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation Time	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2019	02	01				0.20								
2019	02	02				0.37								
2019	02	03				0.04								
2019	02	04				0.38		4.0						
2019	02	05				0.01		T						
2019	02	06				0.00		0.0						
2019	02	07				0.00		0.0						
2019	02	08				T		T						
2019	02	09				0.81		7.0						
2019	02	10				0.03		T						
2019	02	11				0.17		1.7						
2019	02	12				1.45		2.3						
2019	02	13				0.19								
2019	02	14				0.00		0.0						
2019	02	15				0.18								
2019	02	16				0.02								
2019	02	17				0.29								
2019	02	18				0.06								
2019	02	19				0.04								
2019	02	20				0.25								
2019	02	21				0.03								
2019	02	22				0.00		0.0						
2019	02	23				0.14								
2019	02	24				0.17								
2019	02	25				0.01								
2019	02	26				0.00		0.0						
2019	02	27				0.00		0.0						
2019	02	28				T								
Summary						4.84		15.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2019	03	01				0.00		0.0									
2019	03	02				0.00		0.0									
2019	03	03				0.00		0.0									
2019	03	04				0.00		0.0									
2019	03	05				0.00		0.0									
2019	03	06				0.00		0.0									
2019	03	07				0.30		0.5									
2019	03	08				0.02											
2019	03	09				0.05											
2019	03	10				0.00											
2019	03	11				0.00		0.0									
2019	03	12				0.76											
2019	03	13				0.05											
2019	03	14				0.00		0.0									
2019	03	15				0.00		0.0									
2019	03	16				0.00		0.0									
2019	03	17				0.00		0.0									
2019	03	18				0.00		0.0									
2019	03	19				0.00		0.0									
2019	03	20				0.00		0.0									
2019	03	21				0.00		0.0									
2019	03	22				0.00		0.0									
2019	03	23				0.01											
2019	03	24				0.00		0.0									
2019	03	25				0.00											
2019	03	26				0.22											
2019	03	27				0.00											
2019	03	28				T											
2019	03	29				0.00		0.0									
2019	03	30				0.00		0.0									
2019	03	31				0.00		0.0									
Summary						1.41		0.5									

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.	Rain, Melted Snow, Etc. (in)	F l a g	Snow, Ice Pellets, Hail (in)	F l a g			At Obs. Time	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2019	04	01					0.00		0.0								
2019	04	02					0.00		0.0								
2019	04	03					0.01										
2019	04	04					0.02										
2019	04	05					0.21										
2019	04	06					0.22										
2019	04	07					0.48										
2019	04	08					0.02										
2019	04	09					0.29										
2019	04	10					0.01										
2019	04	11					0.38										
2019	04	12					0.52										
2019	04	13					0.01										
2019	04	14					0.06										
2019	04	15					0.02										
2019	04	16					0.03										
2019	04	17					0.14										
2019	04	18					0.06										
2019	04	19					0.11										
2019	04	20					0.21										
2019	04	21					0.00		0.0								
2019	04	22					0.01										
2019	04	23					0.14										
2019	04	24					T										
2019	04	25					0.00		0.0								
2019	04	26					0.00		0.0								
2019	04	27					0.00		0.0								
2019	04	28					T										
2019	04	29					0.00		0.0								
2019	04	30					0.00		0.0								
Summary							2.95		0.0								

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2019	05	01				0.00								
2019	05	02				0.00		0.0						
2019	05	03				0.00		0.0						
2019	05	04				0.00		0.0						
2019	05	05				0.00		0.0						
2019	05	06				0.00		0.0						
2019	05	07				0.00		0.0						
2019	05	08				0.00		0.0						
2019	05	09				0.00		0.0						
2019	05	10				0.00		0.0						
2019	05	11				0.00		0.0						
2019	05	12				0.00		0.0						
2019	05	13				0.00		0.0						
2019	05	14				0.02								
2019	05	15				0.14								
2019	05	16				0.04								
2019	05	17				0.36								
2019	05	18				0.01								
2019	05	19				T								
2019	05	20				T								
2019	05	21				0.11								
2019	05	22				T								
2019	05	23				0.00		0.0						
2019	05	24				T								
2019	05	25				0.00		0.0						
2019	05	26				0.27								
2019	05	27				T								
2019	05	28				0.00		0.0						
2019	05	29				0.00		0.0						
2019	05	30				0.00		0.0						
2019	05	31				0.00		0.0						
Summary						0.95		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2019	06	01				0.00		0.0									
2019	06	02				0.00		0.0									
2019	06	03				0.00		0.0									
2019	06	04				0.00		0.0									
2019	06	05				0.00		0.0									
2019	06	06				T											
2019	06	07				T											
2019	06	08				0.14											
2019	06	09				0.00		0.0									
2019	06	10				0.00		0.0									
2019	06	11				0.00		0.0									
2019	06	12				0.00		0.0									
2019	06	13				0.00		0.0									
2019	06	14				0.00		0.0									
2019	06	15				0.00		0.0									
2019	06	16				0.00		0.0									
2019	06	17				0.00		0.0									
2019	06	18				0.05											
2019	06	19				0.02											
2019	06	20				0.37											
2019	06	21				T											
2019	06	22				0.00		0.0									
2019	06	23				0.04											
2019	06	24				0.03											
2019	06	25				0.01											
2019	06	26				0.00		0.0									
2019	06	27				0.06											
2019	06	28				0.02											
2019	06	29				0.00		0.0									
2019	06	30				0.00		0.0									
Summary						0.74		0.0									

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2019	07	01				0.00		0.0						
2019	07	02				0.00								
2019	07	03				0.43								
2019	07	04				0.01								
2019	07	05				0.00								
2019	07	06				0.00								
2019	07	07				0.00		0.0						
2019	07	08												
2019	07	09												
2019	07	10				0.25								
2019	07	11				0.15								
2019	07	12				T								
2019	07	13				0.00		0.0						
2019	07	14				0.00		0.0						
2019	07	15												
2019	07	16				0.07								
2019	07	17				0.02								
2019	07	18				0.13								
2019	07	19				0.10								
2019	07	20				0.00		0.0						
2019	07	21				0.00								
2019	07	22				0.00		0.0						
2019	07	23				0.00		0.0						
2019	07	24				0.00		0.0						
2019	07	25				0.00		0.0						
2019	07	26				0.00		0.0						
2019	07	27				0.00		0.0						
2019	07	28				0.00		0.0						
2019	07	29												
2019	07	30												
2019	07	31												
Summary						1.16		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2019	08	01												
2019	08	02												
2019	08	03												
2019	08	04				0.22								
2019	08	05				0.00								
2019	08	06				0.00								
2019	08	07				0.00								
2019	08	08				0.00								
2019	08	09				0.00								
2019	08	10				0.33								
2019	08	11												
2019	08	12												
2019	08	13												
2019	08	14												
2019	08	15												
2019	08	16				0.05								
2019	08	17				0.00		0.0						
2019	08	18				0.00		0.0						
2019	08	19				0.00		0.0						
2019	08	20				0.00		0.0						
2019	08	21				0.11								
2019	08	22				0.11								
2019	08	23				T								
2019	08	24				0.00								
2019	08	25				0.00		0.0						
2019	08	26				0.00		0.0						
2019	08	27				0.00		0.0						
2019	08	28				0.00								
2019	08	29				0.00		0.0						
2019	08	30				0.08								
2019	08	31				0.00		0.0						
						0.90		0.0						
			Summary											

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.	Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			At Obs. Time	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2019	09	01			0.02												
2019	09	02			0.00		0.0										
2019	09	03			0.00		0.0										
2019	09	04			0.00												
2019	09	05			0.00		0.0										
2019	09	06			0.00		0.0										
2019	09	07			0.00		0.0										
2019	09	08			0.66												
2019	09	09			0.10												
2019	09	10			0.30												
2019	09	11			0.01												
2019	09	12			0.00		0.0										
2019	09	13			0.20												
2019	09	14			0.00		0.0										
2019	09	15			0.34												
2019	09	16			0.18												
2019	09	17			0.03												
2019	09	18			0.50												
2019	09	19			0.01												
2019	09	20			0.02												
2019	09	21			0.00		0.0										
2019	09	22			0.03												
2019	09	23			0.23												
2019	09	24			0.12												
2019	09	25			0.01												
2019	09	26			0.03												
2019	09	27			0.13												
2019	09	28			0.08												
2019	09	29			0.09												
2019	09	30			0.02												
Summary					3.11		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used."

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall	Snow, Ice Pellets, Hail (in)	Fall			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2019	10	01				0.00			0.0									
2019	10	02				0.00			0.0									
2019	10	03				0.01												
2019	10	04				0.08												
2019	10	05				0.01												
2019	10	06				0.00			0.0									
2019	10	07				0.00			0.0									
2019	10	08				0.02												
2019	10	09				0.41												
2019	10	10				0.00			0.0									
2019	10	11				0.00			0.0									
2019	10	12				0.00			0.0									
2019	10	13				T												
2019	10	14				0.00			0.0									
2019	10	15				0.00			0.0									
2019	10	16				0.10												
2019	10	17				0.34												
2019	10	18				0.18												
2019	10	19				1.26												
2019	10	20				0.21												
2019	10	21				0.16												
2019	10	22				0.30												
2019	10	23				0.03												
2019	10	24				0.00			0.0									
2019	10	25				0.00			0.0									
2019	10	26				0.23												
2019	10	27				0.00			0.0									
2019	10	28				0.00			0.0									
2019	10	29				0.00			0.0									
2019	10	30				0.00			0.0									
2019	10	31				0.00			0.0									
			Summary			3.34			0.0									

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2019	11	01				0.00		0.0						
2019	11	02												
2019	11	03				0.00		0.0						
2019	11	04				0.00		0.0						
2019	11	05				0.00		0.0						
2019	11	06				0.00		0.0						
2019	11	07				0.00		0.0						
2019	11	08				0.00		0.0						
2019	11	09				0.11								
2019	11	10				0.14								
2019	11	11				0.01								
2019	11	12				0.23								
2019	11	13				0.04								
2019	11	14				0.00		0.0						
2019	11	15				0.19								
2019	11	16				0.01								
2019	11	17				0.04								
2019	11	18				0.10								
2019	11	19				0.57								
2019	11	20				0.05								
2019	11	21				0.00		0.0						
2019	11	22				0.00		0.0						
2019	11	23				0.00		0.0						
2019	11	24				0.04								
2019	11	25				0.10								
2019	11	26				0.13								
2019	11	27				0.02								
2019	11	28				0.00		0.0						
2019	11	29												
2019	11	30												
Summary						1.78		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a "multiday total, accumulated since last measurement, is being used."

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling			At Obs. Time	Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2019	12	01				0.00												
2019	12	02				0.05												
2019	12	03				0.00		0.0										
2019	12	04				0.02												
2019	12	05				0.02												
2019	12	06				0.00		0.0										
2019	12	07				0.27												
2019	12	08				0.14												
2019	12	09				0.01												
2019	12	10				0.00		0.0										
2019	12	11				0.15												
2019	12	12				0.45												
2019	12	13				0.15												
2019	12	14				0.02												
2019	12	15				0.55												
2019	12	16				0.14												
2019	12	17				0.01												
2019	12	18				0.00		0.0										
2019	12	19				0.41												
2019	12	20				2.35												
2019	12	21				2.25												
2019	12	22				0.28												
2019	12	23				0.37												
2019	12	24				0.03												
2019	12	25				T												
2019	12	26				0.00		0.0										
2019	12	27				0.03												
2019	12	28				0.01												
2019	12	29				0.01												
2019	12	30				0.05												
2019	12	31				0.04												
			Summary			7.81		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation Time	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2020	01	01			At Observation Time	0.19								
2020	01	02				T								
2020	01	03				0.17								
2020	01	04				0.27								
2020	01	05				0.17								
2020	01	06				0.29								
2020	01	07				0.56								
2020	01	08				0.05								
2020	01	09				0.09								
2020	01	10				0.13								
2020	01	11				0.56								
2020	01	12				0.26								
2020	01	13				0.10		0.4						
2020	01	14												
2020	01	15				0.02								
2020	01	16				0.02								
2020	01	17				T								
2020	01	18				0.50								
2020	01	19				0.03								
2020	01	20				0.06								
2020	01	21				0.24								
2020	01	22				0.79								
2020	01	23				0.43								
2020	01	24				0.80								
2020	01	25				0.50								
2020	01	26				0.30								
2020	01	27				0.09								
2020	01	28				1.02								
2020	01	29				0.06								
2020	01	30				0.24								
2020	01	31				0.27								
Summary						8.21		0.4						

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2020	02	01			At Observation	1.44								
2020	02	02				0.01								
2020	02	03				0.09								
2020	02	04				0.01								
2020	02	05				0.49								
2020	02	06				0.84								
2020	02	07				0.53								
2020	02	08				0.28								
2020	02	09				0.02								
2020	02	10				0.00	0.0							
2020	02	11				0.00	0.0							
2020	02	12				0.18								
2020	02	13				0.01								
2020	02	14				0.05								
2020	02	15				0.10								
2020	02	16				0.29								
2020	02	17				0.01								
2020	02	18				0.00	0.0							
2020	02	19												
2020	02	20												
2020	02	21				0.00								
2020	02	22				0.00	0.0							
2020	02	23				0.19								
2020	02	24				0.01								
2020	02	25				0.00	0.0							
2020	02	26				0.02								
2020	02	27				0.01								
2020	02	28				0.00	0.0							
2020	02	29				0.16								
			Summary			4.74	0.0							

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests.

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Fall, Snow, Ice Pellets, Hail (in)	Fall, Snow, Ice Pellets, Hail, Ice on Ground (in)			Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2020	03	01				0.09								
2020	03	02				0.01	0.0							
2020	03	03				0.06								
2020	03	04				0.03								
2020	03	05				T								
2020	03	06				0.60								
2020	03	07				0.10								
2020	03	08				0.03								
2020	03	09				0.01								
2020	03	10				0.00	0.0							
2020	03	11				0.03								
2020	03	12				0.02								
2020	03	13				0.09								
2020	03	14				0.29								
2020	03	15				0.00	0.0							
2020	03	16				0.00	0.0							
2020	03	17				0.00	0.0							
2020	03	18				0.00	0.0							
2020	03	19				0.00	0.0							
2020	03	20				0.00	0.0							
2020	03	21				0.00	0.0							
2020	03	22				0.00	0.0							
2020	03	23				T								
2020	03	24				0.06								
2020	03	25				0.13								
2020	03	26				0.05								
2020	03	27				0.03								
2020	03	28				0.03								
2020	03	29				0.68								
2020	03	30				0.40								
2020	03	31				0.24								
Summary						2.98	0.0							

Empty, or blank, cells indicate that a data observation was not reported.

\*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

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"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time			At Obs. Time	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth				
			Max.	Min.			Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)			Falling	Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.
2020	04	01				0.05												
2020	04	02				0.04												
2020	04	03				T												
2020	04	04				T												
2020	04	05				0.00		0.0										
2020	04	06				0.00		0.0										
2020	04	07				0.00		0.0										
2020	04	08				0.00		0.0										
2020	04	09				0.00		0.0										
2020	04	10				0.00		0.0										
2020	04	11				0.00		0.0										
2020	04	12				0.00		0.0										
2020	04	13				0.00		0.0										
2020	04	14				0.00		0.0										
2020	04	15				0.00		0.0										
2020	04	16				0.00		0.0										
2020	04	17				0.00		0.0										
2020	04	18				T												
2020	04	19				0.04												
2020	04	20				0.00		0.0										
2020	04	21				0.00		0.0										
2020	04	22				0.02												
2020	04	23				0.76												
2020	04	24				0.11												
2020	04	25				0.17												
2020	04	26				0.25												
2020	04	27				0.22												
2020	04	28				0.04												
2020	04	29				0.00		0.0										
2020	04	30				0.03												
			Summary			1.73		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

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"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)							
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth					
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling			At Obs. Time	Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2020	05	01				T													
2020	05	02				0.09													
2020	05	03				0.21													
2020	05	04				0.00		0.0											
2020	05	05				0.00		0.0											
2020	05	06				T													
2020	05	07				T													
2020	05	08				0.00		0.0											
2020	05	09				0.00		0.0											
2020	05	10				0.00		0.0											
2020	05	11				0.00													
2020	05	12				0.04													
2020	05	13				0.05													
2020	05	14				0.08													
2020	05	15				0.07													
2020	05	16				0.02													
2020	05	17				0.65													
2020	05	18				0.02													
2020	05	19				0.00		0.0											
2020	05	20				0.00		0.0											
2020	05	21				0.22													
2020	05	22				0.21													
2020	05	23				0.17													
2020	05	24				0.00		0.0											
2020	05	25				0.04													
2020	05	26				0.08													
2020	05	27				0.02													
2020	05	28				0.00		0.0											
2020	05	29				0.00		0.0											
2020	05	30				0.00		0.0											
2020	05	31				1.19													
			Summary			3.16		0.0											

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"s" This data value failed one of NCDC's quality control tests.

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Year	Month	Day	Temperature (F)		Precipitation				Evaporation		Soil Temperature (F)			
			24 Hrs. Ending at Observation Time		At Observation	24 Hour Amounts Ending at Observation Time			24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth	
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling		Ground Cover (see *)	Max.	Ground Cover (see *)	Max.
2020	06	01				0.02								
2020	06	02				0.00		0.0						
2020	06	03				T								
2020	06	04				0.00								
2020	06	05				0.00								
2020	06	06				0.00								
2020	06	07				0.04								
2020	06	08				0.02								
2020	06	09				0.11								
2020	06	10				0.20								
2020	06	11				0.02								
2020	06	12				0.14								
2020	06	13				0.26								
2020	06	14				0.01								
2020	06	15				0.07								
2020	06	16				0.12								
2020	06	17				0.00		0.0						
2020	06	18				0.00		0.0						
2020	06	19				0.00		0.0						
2020	06	20				0.01								
2020	06	21				0.03								
2020	06	22				0.00		0.0						
2020	06	23				0.00		0.0						
2020	06	24												
2020	06	25				0.00		0.0						
2020	06	26				0.00		0.0						
2020	06	27				T								
2020	06	28				0.61								
2020	06	29				0.01								
2020	06	30				0.03								
Summary						1.70		0.0						

Empty, or blank, cells indicate that a data observation was not reported.

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Year	Month	Day	Temperature (F)		At Observation	Precipitation				Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time			24 Hour Amounts Ending at Observation Time				24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth		8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Falling	Snow, Ice Pellets, Hail (in)	Falling			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2020	07	01				0.01											
2020	07	02				T											
2020	07	03				0.00		0.0									
2020	07	04				T											
2020	07	05				0.00		0.0									
2020	07	06				0.00		0.0									
2020	07	07				0.00		0.0									
2020	07	08				0.02											
2020	07	09				0.01											
2020	07	10				0.02											
2020	07	11				0.00		0.0									
2020	07	12				0.01											
2020	07	13				0.04											
2020	07	14				0.00		0.0									
2020	07	15				0.00		0.0									
2020	07	16				0.00		0.0									
2020	07	17				0.13											
2020	07	18				0.03											
2020	07	19				0.00		0.0									
2020	07	20				0.00		0.0									
2020	07	21				0.00		0.0									
2020	07	22				0.01											
2020	07	23															
2020	07	24															
2020	07	25															
2020	07	26															
2020	07	27															
2020	07	28															
2020	07	29															
2020	07	30															
2020	07	31															
			Summary			0.28		0.0									

Empty, or blank, cells indicate that a data observation was not reported.

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